Beryllium Mill - Delta, Utah

Application for Renewal of Class IIIb Landfill Permit (Revised)

Prepared For:

Brush Resources, Inc.
P. O. Box 815
Delta, UT

Prepared By:

jbr environmental consultants, inc.

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Sandy, Utah 84093
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INTRODUCTION

With this modified *Checklist for Class IIIb Landfill,* Brush Resources, Inc. (Brush) is submitting the enclosed application for renewal of the landfill permit for the existing onsite landfill located at the beryllium mill site near Delta, Utah. In addition, Brush proposes the addition of a cell for future expansion.

General description of the facility (R315-310-3(1)(b))
Brush owns and operates a beryllium mill facility located approximately 10 miles north of Delta, Utah. The existing landfill is located north of the main manufacturing buildings in the tailings pond. The landfill has been in use for approximately 25 years and consists of two cells, one active and one for future use. With this renewal application, Brush proposes to designate a third cell within the tailings pond for future use.

The current active cell, Cell 1, is located in a designated area of the current tailings pond. The current inactive cell, Cell 2, is located southeast of the current tailings pond. Cell 3 is being proposed for future use prior to Cell 2. See Appendix A for maps of each cell location.

No unauthorized or unacceptable waste is placed in the landfill. The Brush facility is secure; a fence surrounds the property and entrance to the facility is gained through a security-manned access booth. Within the plant, the operators are trained to know and understand the limitations on waste that can be deposited in the landfill and there are staff assigned to monitor the acceptance of material for disposal. Onsite waste handling consists of the waste being moved to the landfill cell by forklift, truck, or hand carried. Cover is applied with a front loader, using tailings slimes or surrounding material around the tailings pond that mainly consist of clay; thus providing a better seal than topsoil.

Location Standards of R315-304-4(2):

R315-304-4(2)(c) states "An existing Class IIIb landfill shall not be subject to the location standards of Subsection R315-304-4(2)(a)." The existing landfill cells located within the Brush mill site are existing Class IIIb landfill cells; therefore, the location standards are inapplicable. However, Cell 1 of this landfill, located within the confines of the current tailings pond system at the mill, is elevated above the general topography such that it will have no adverse impact on the surrounding land, is not located within any wetland, and, at its lowest level, is greater than ten feet above the historical high level of ground water. All of this information is verifiable within documentation already submitted to the Division of Water Quality for purposes of obtaining and renewing the existing Groundwater Permit No. UGW270001. This documentation is submitted as Appendix B, Section J; the current Groundwater Permit is submitted as Appendix C.

The addition of Cell 3 immediately adjacent to Cell 1 would be subject to the criteria in this section. It should be noted that the area proposed for Cell 3 has been an active tailings pond for over 30 years and meets the same location standards as Cell 1 with respect to floodplain, wetlands, groundwater level, and historical preservation. Brush Resources is the only landowner within 1,000 feet of the proposed new landfill cell. Millard County is the local government with jurisdiction over the facility.

Legal description of the facility (R315-310-3(1)(c))
The legal description of the existing onsite landfill is:

NE ¼ Section 32, Township 15 South, Range 5 West, Salt Lake Base and Meridian
Latitude: 39°28'22", Longitude: 112°26'7"

Land use in the surrounding area consists of range land grazing. There is a coal-fired power plant, owned by Intermountain Power, located approximately 7 miles northwest of the site. Aside from the power plant and the nearby town of Lyndyll, most of the surrounding area is in its undisturbed, natural state.

Types of waste and area served by the facility (R315-310-3(1)(d))
The landfill accepts non-hazardous waste that is generated at the beryllium mill site. The waste consists of obsolete equipment, pallets and other debris generated during plant operations, empty drums, small amount of asbestos material removed from plant tanks and piping, and other industrial debris. The waste may be contaminated with beryllium. Within the plant, the operators are trained to know and understand the limitations on waste that can be deposited in the landfill and there are staff assigned to monitor the acceptance of material for disposal. No other wastes are accepted therefore, this landfill is not a commercial landfill and no other areas are served.

A five year average of waste placed in the landfill is approximately 35 tons per year, though that number can vary significantly depending to the level of production at the facility. Waste is not typically deposited in the landfill daily, but is collected until approximately one cubic yard is accumulated. One cubic yard of waste is thus placed in the landfill an average of approximately once every two days.

PLAN OF OPERATION (R315-310-3(1)(e))

Intended schedule of construction (R315-302-2(2)(a))
There is no intended plan of construction for Cell 1 since it is already in existence. Construction details of the tailings pond are listed in the Ground Water Discharge Permit, located in Appendix C.

Cell 2 is a bermed containment area for a decommissioned storage tank. No additional construction has been done or is anticipated to be done to make it usable as a landfill cell in the future. It has been constructed southeast of the current cell, after the original permit was received.

Cell 3 has, in effect, been constructed as part of the larger tailings pond and no additional construction activities are anticipated to make the area suitable for the intended expansion.

Description of onsite waste handling procedures (R315-302-2(2)(b), R315-310-3(1)(f))
Onsite waste handling consists of the waste being moved to the landfill cell by forklift, truck, or hand carried. A log is kept of the type of waste placed in the landfill. See Appendix D, Section 1 for a copy of the log sheet. Cover is applied, using wet clay material from the tailings pond (tailings slime) for Cells 1 and 3. Soil cover would be used for Cell 2. The entire site is secured with fencing, locked gates, security manned entrances, and controlled access.

Schedule for conducting inspections and monitoring (R315-302-2(2)(c), R315-302-2(5)(a), and R315-310-3(1)(g)):

Operational monitoring of the tailings pond occurs daily. The monitoring identifies any problems or potential problems to human health or the environment. Inspections are designed to prevent malfunction or deterioration, operator errors, and discharge monitoring. Since the landfill is located in the tailings pond, it may be included in the daily inspection, or, at a minimum, quarterly. A copy of the inspection log sheet is located in Appendix D, Section 2.

Contingency plans in the event of a fire or explosion (R315-302-2-(2)(d))
The waste is not flammable. Some combustible material (paper, cardboard, wood, etc.) may exist; however, a fire or explosion in the landfill area is highly unlikely. The area is served by the local fire department, and equipment is located onsite to move soil for fire suppression, if necessary.

Corrective action programs to be initiated if ground water is contaminated (R315-302-2(2)(e))
According to R315-304-5(1)(a), this is not applicable to Class III landfills. However, since there is a current Groundwater Permit in place, corrective actions in the event of groundwater contamination are addressed in the permit. Appendix A shows the location of the landfill cells relative to the entire tailings pond system and mill facility. Per the groundwater permit, a system of monitoring wells is in place to monitor any potential impact to groundwater. In addition, it has been demonstrated that a natural clay aquitard effectively prevents impacts to groundwater from the landfill or the closely studied tailings pond. See Appendix B, Section J – Description of Operations, which was part of a document submitted as part of a previous Groundwater Permit renewal.

Contingency plans for other releases, e.g. explosive gases or failure of run-off collection system (R315-302-2(2)(f))
According to R315-304-5(1)(a), this is not applicable to Class III landfills.

A plan to control fugitive dust generated from roads, construction, general operation and covering the waste (R315-302-2(2)(g)
Fugitive dust is controlled by prudent speed and moisture content of the road base, along with rip rap on the road. Native seeds were planted to stabilize outside of dike. The site's Title V Air Quality Permit limits 40% opacity on fugitive dust. Cover is applied to the landfill and consists of tailings slimes that are damp in nature for Cells 1 and 3. Soil cover will be used for Cell 2.

A plan to control wind-blown litter that includes equipment and methods to contain litter, including a schedule and methods to collect scattered litter in a timely manner. (R315-302-2(2)(h)
Brush Resources' Class IIIb Landfill will not be accepting office waste materials and will thus not be required to supply a litter control plan for light-weight wind-blown materials.

Description of maintenance of installed equipment (R315-302-2(2)(i))
Details of the mound water recovery system associated with the tailings pond are discussed in the Ground Water Discharge Permit, Appendix C.

Procedures for excluding the receipt of Regulated hazardous or PCB containing waste (R315-302-2(2)(j))
Hazardous waste is handled in accordance with all federal, state, and local laws and transported for disposal offsite to approved, permitted facilities. Employees are trained to identify and classify waste according to its hazard class. An active hazardous waste management plan is in place. There are no PCB containing wastes on site.

Procedures for controlling disease vectors (R315-302-2(2)(k))
The waste materials in the landfill are not attractive to disease vectors or support vector habitats; therefore no special method to control them is necessary. However, the cover of six inches is sufficient to control disease vectors. Although wastewater and leachate is pumped into the tailings pond, the area where the landfill is located is protected from this water, and no water is pumped into the landfill section.

A plan for alternative waste handling (R315-302-2(2)(l))
In the event the landfill is unable to accept waste, any non hazardous waste can be deposited into a large waste receptacle until the onsite landfill is either, able to accept the waste, or until another onsite location is determined.

A general training and safety plan for site operations (R315-302-2-(2)(o))
Please refer to Appendix E for Brush's general site safety plan addendum as it relates to the landfill at the Delta mill facility.

MAPS

Current topographical map (R315-310-4(2)(a))
Refer to Appendix A for the current topographical map.

Most recent U. S. Geological Survey topographic map.
Refer to Appendix A for the most recent U. S. Geological Survey map.

ENGINEERING REPORT – PLANS, SPECIFICATIONS, AND CALCULATIONS

Cell design, cover design, fill methods, elevation of final cover including plans and drawings (R315-310-3(1)(b))
The landfill has been created using the cell method of filling. Waste is deposited as needed. The working face of the cell is approximately 30'x 50'x 8'. Since the landfill is located in the tailings pond, details of the operation of the pond are located in Appendix B, Section J. The area in which the inactive cell, (Cell 2), is located is an old tailings pond area, thus the design is very similar to the active cell area (Cell 1). With this renewal application, Brush proposes the addition of Cell 3 adjacent to Cell 1 on the east. It will be approximately the same size and dimension of Cell 1, and will be used prior to Cell 2.

Brush plans to close the landfill at the mill facility in a manner that will meet all requirements of R315-305-5(5)(b). As part of the much larger tailings pond, the cover design is part of the larger closure plan for the tailings pond currently on file with the UDWQ. The waste contained in the landfill is already covered in place and leveled periodically. This practice will continue as long

as the landfill is in use and at the time for closure. The final filled area will be covered with at least the minimum required cap consisting of two feet of soil including six inches of topsoil. The final cap will be contoured such that the grade is greater than 2 percent and less than 33 percent and will be revegetated with native vegetation or a suitable alternative approved by the Executive Secretary for other similar operations. Any deviation from this plan will be submitted in advance to the Executive Secretary and the Division of Solid and Hazardous Waste for consideration and approval.

Design and location of run-on and run-off control systems (R315-310-5(2)(b))
Details of the tailings pond, its design and operation, are discussed in the Ground Water Discharge Permit. Operations under the Ground Water Permit conditions meet or exceed this rule. Because Cells 1 and 3 are part of the tailings pond system that is completely raised and enclosed, there is no potential for run-on from a 25-year storm event and there is more than adequate capacity to contain any run-off from a 25-year storm event. Cell 2 of the landfill is located in an area which has also been designed to contain any run-off from a 25-year storm event. There is no potential for run-on.

CLOSURE PLAN (R315-310-3(1)(h) and R315-310-5(2)(c))
Brush will, within 60 days after certification of closure, notify the Millard County Recorder to file proof of closure as outlined in R315-302-2(6). The Closure Plan immediately follows this checklist.

POST-CLOSURE CARE PLAN (R315-310-3(1)(h))
Brush will provide post closure activities that will include, at a minimum, monitoring of land and water, for a period of 30 years, or as long as the Executive Secretary determines is necessary for the facility or unit to become stabilized and to protect human health and environment. The Post Closure Plan immediately follows this checklist.

FINANCIAL ASSURANCE (R315-310-3(1)(j))

Identification of closure costs including cost calculations (R315-310-4(2)(d)(iv))
Since Cells 1 and 3 are located in the tailings pond, for which closure costs have been calculated, closure of the tailings pond will also close the landfill for cells 1 & 3 only. Closure of Cell 2 will close at a different time. Closure costs for the tailings pond are located in Attachment 3 of the Closure Plan. The costs for closure of the landfill section are estimated at $74,373.

Identification of post-closure costs including cost calculations (R315-310-4(2)(e)(iv))
Post closure costs for the tailings pond are located in Attachment 1 of the Closure Plan. The costs for post-closure of the landfill section estimated at $13,665. This includes reseeding, site inspections, groundwater monitoring and all other requirements.

Identification of the financial assurance mechanism that meets the requirement of Rule 315-309 and the date the mechanism will become effective (R315-309-1(1))
A copy of the Financial Assurance mechanism is provided in Appendix F.

CLOSURE AND POST CLOSURE PLAN

for
Brush Resources, Inc.
Delta, Utah Mill Refuse Landfill

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1.0 Introduction

Brush Resources, Inc. (Brush) is submitting the enclosed Closure and Post-Closure Plan in accordance with the State of Utah, Division of Solid and Hazardous Waste's (DSHW) R315-304-5 rules with this document.

1.1 Site Description and Background

Brush owns and operates a beryllium mill facility located approximately 10 miles north of Delta, Utah. The existing landfill is located north of the main manufacturing buildings in the tailings ponds. The landfill has been in use for approximately 30 years and consists of two cells, one active and one for future use. The active cell is located in a designated area of the current tailings pond. The inactive cell is located southeast of the tailings pond area. With the 2008 permit renewal application, Brush is proposing to add Cell 3 for future expansion. See Appendix A for maps of each cell location.

The mill landfill is an industrial solid waste landfill that meets the classification of a Class IIIb Landfill. It is not accessible to the public, and accepts only non-hazardous debris that is generated onsite. The landfill is not located on public lands or near public drinking water supplies. The landfill is not located in a subsidence area, flood zone, near designated wetlands, or above an underground mine. There are no surface bodies of water, residential dwellings, or incompatible structures within ¼ mile of the landfill. The coordinates of the landfills are as follows:

NE ¼ Section 32, Range 5 West, Township 15 South
Latitude 39°28'22" Longitude 112°26'7"

2.0 Statement of Closure Plan

Brush is required to submit Closure and Post-Closure Plans in a way that "minimizes the need for further maintenance and minimized the post-closure formation and releases of leachate and explosive gases to the air, groundwater or surface water to the extent necessary to protect the public health and welfare and prevent any nuisance." This document represents Brush's compliance with R315-302-3 (2).

3.0 Closure Plan

3.1 Methods, Procedures, and Processes

All materials disposed of within the existing Class IIIb landfills have been and will continue to be within the acceptable waste constituents of an industrial non-hazardous landfill. The landfill accepts only non-hazardous waste that is generated at the mill site. The waste consists of obsolete equipment, pallets and other debris generated during plant operations, emptied, appropriately rinsed drums, and other industrial debris. (Refer to the

current Ground Water Discharge Permit, issued by the Utah Division of Water Quality, Section 1C1, located in Appendix C). No other wastes are accepted; therefore, this landfill is not a commercial landfill and no other areas are served. On average, approximately <1.0 cubic yards per day of this waste is disposed at the landfill.

3.1.1 Maintenance and Control

Access to the facility is restricted through plant security and property fencing. Signs are posted indicating authorized personnel only are allowed on the access roads leading into the plant. Wind dispersal of landfill litter is minimized by the application of cover.

After cessation of operations at the beryllium mill, the landfill will be closed with an application of the intermediate cover and a complete inspection of the surface will be performed. Cleanup of the site will be performed concurrently. All remaining visible litter and debris in the immediate vicinity will be placed in the final lift of the landfill unit. At that time, the final cover will be applied. A thorough closure inspection shall consist of observations for erosion, sloping, drainage, surface leachate, and run-on. Areas requiring repairs/modifications will be documented on the Landfill Inspection Form (see Appendix D, Section #2). Necessary modifications will be made using appropriate materials and compacted, as required.

3.1.1.1 Escape of Air Pollutants/Gases

The contents of this industrial waste landfill have little or no amounts of putrescible materials and the decomposition of the organic wastes are minimal. The U.S. EPA reports that methane is generated from "municipal" solid waste only when the moisture content exceeds 40% (U.S. EPA, 1994). Due to the limited moisture at the site and the absence of putrescible wastes contained in the heap, methane gas generation is not anticipated. Vector, dust, and odors are effectively controlled so they are not a nuisance or hazard to health, safety or property. None of the waste is flammable, but combustible waste may exist; however, a fire or explosion in the landfill area is highly unlikely. The area is served by the local fire department, and equipment is located onsite to move soil for fire suppression, if necessary.

3.1.1.2 Control of Run-off

Runoff from the landfill is not expected to occur due to the design of the tailings pond. After closure, the absorption and evapotranspiration by the vegetation layer and the absence of any appreciable run-on will ensure the control of runoff. Once the vegetation layer growth is established, most storm events will not result in significant direct run-off from the landfill surface area. Nonetheless, significant percolation through the cover layer is unlikely, thus leachate or seepage from the heap is minimal.

3.1.2 Final Facility Topography

Refer to groundwater monitoring plan, Appendices B and C.

3.1.3 Drainage Plan

Refer to groundwater monitoring plan, Appendices B and C.

3.1.4 Composition of Cover

The final cover system will be made of the intermediate compacted cover, compacted soil layer, and vegetation layer. The material used for final cover will be placed on the graded, compacted, intermediate cover layer (12 inches of intermediate cover). The soil layer material will be compacted and will be composed of clayey silt-sand mixture with a low permeability. The soil layer will be no less than 6 inches of compacted soil and will come from onsite sources. These two layers total 18 inches of compacted soil, which will serve to minimize infiltration. A vegetation layer of no less than 6 inches will then be applied. The vegetation layer will be of an organic composition that will support native or compatible plant life. The final cover depth will be no less than 24 inches.

3.1.4.1 Sloping

The final cap will be contoured such that the grade is greater than 2 percent and less than 33 percent and will be revegetated with native vegetation or a suitable alternative approved by the Executive Secretary for other similar operations. Any deviation from this plan will be submitted in advance to the Executive Secretary and the Division of Solid and Hazardous Waste for consideration and approval.

3.1.4.2 Landscaping

The waste will be leveled to the extent practicable, covered with a minimum of two feet of soil and the cover contoured as described above. No vegetation, other than local introduced and native grasses and woody species identified in this plan will be placed on the landfill.

3.1.4.3 Vegetation

The vegetation layer provides the base for native plants to grow. The layer will be of sufficient organic content and volume such that the landfill's approved seed mixes will have the ability to prosper. Approved seed mixes for the area include:

Common Name	Scientific Name	Per Acre
Indian Rice Grass, variety *nezpar*	*Oryzopsis hymenoides*	3.0 lbs
Western Wheatgrass variety *arriba*	*Agropyron smithii*	3.0 lbs
Crested Wheatgrass variety *hycrest*	*Agropyron cristatum*	2.0 lbs
Snake River Wheatgrass variety secar	*Agropyron*	2.0 lb
Apar Lewis Flax	*Linum lewisii*	2.0 lbs
Four Wing Saltbush	*Atriplex canescens*	2.0 lbs
Greasewood		2.0 lbs
Alkalai Sacaton	*Sporobulos airoides*	2.0 lbs

The final seed mixes will be a combination of the above mentioned seeds, and planted by the drilling method. Approximately 5 acres will be seeded during closure at a density of approximately 18 pounds per acre.

3.1.5 Description of Monitoring and Maintenance

Qualified personnel will be located near or around the landfill to supervise continued activities during closure. The closure of the landfill will be concurrent with the landfill's final development. Landfill operations will proceed in a manner that will minimize the working area of the landfill. Once the final intermediate cover is placed and graded, landfill inspections will commence. The Post-Closure Landfill Inspection Form (see Attachment # 1) will be used for the final closure inspection.

3.1.6 Contact Personnel

The following positions and personnel represent Brush's contact list of responsible officials as they pertain to the Delta Mill Landfill operation, closure, and post-closure issues.

Landfill Owner: Brush Resources, Inc.
Operator: Brush Resources, Inc
Address: P.O. Box 815
Delta, Utah

Contact Person: **Alex Boulton or John Otto**
Phone: 435-864-2701

3.2 Maximum Portion of Operation

The cell method of land filling is in use at the landfill, within the tailings pond system. Thus, the working face has been limited to the smallest area practical in order to confine the amount of exposed waste without interfering with effective operation. The maximum working face (surface area) open at any one time has been approximately 1500 square feet, a total maximum height of 50 feet and horizontal spatial distance of approximately 30 feet.

3.3 Maximum Inventory and Estimated Life

Based on the final closure design, original topography, and volume of the final cover, the approximate maximum inventory for the landfill cells is as shown in the following table.

Landfill Cell Volumes in Cubic Yards

	Maximum Waste Volume	Total Volume Including Cover	Existing Waste Volume	Remaining Waste Volume
Cell 1	112,900	124,170	71,269	41,631
Cell 2	48,400	57,789	0	48,400
Cell 3	112,900	124,170	0	112,900
Total	274,200	306,129	71,269	202,931

Based on the above volumes, a 5-year average of the tonnage placed in the landfill (35.4 tons equaling approximately 126 cubic yards per year), a remaining waste volume of 41,631 cubic yards in Cell 1, and an estimated amount of cover placed in the landfill annually, the estimated life of the currently permitted landfill cells is approximately 40 years from the time of this submittal. With the addition of Cell 3 the estimated life of the landfill would increase to 148 years.

3.4 Schedule for Completion

Within 60 days of scheduled completion of the landfill, Brush will notify the DSHW. Closure activities will commence within 30 days after receipt of the final volume of waste, and will be completed within 180 days of the start time. Brush will notify the DSHW upon completion of closure to schedule the final inspection by regulatory agencies.

3.5 Notification and Review

Within 60 days of certification of closure of the mill landfill, Brush will make the proper notification and submittals to the Millard County recorder and, upon doing so, file proof of title filing with the Executive Secretary. With respect to the requirement at R315-302-2(6)(b) for public access to records containing information about solid waste amounts, location, and periods of operation, Brush files annual reports to the Division of Solid and Hazardous Waste, as required. These documents are public records and may be obtained by local zoning authorities from either the Division or Brush, upon request.

3.6 Closure Activity Notification

Brush will begin closure activities of the landfill in accordance with the approved Closure Plan no later than 30 days following the final receipt of waste at the landfill. Closure activities shall be completed within 180 days from their starting time, however, Brush reserves the right for extensions of the deadline for beginning and concluding closure activity. The Executive Secretary will be given written justification for any extension requests. If necessary, fences will be erected to limit service and signs will be posted at conspicuous locations indicating closure activities have begun. Alternative disposal site locations will be indicated on the closure notice signs.

4.0 Post-Closure Plan

After the Closure Plan has been executed, completed, and certified, the following post-closure and end use plan will be implemented. Following closure of the landfill, Brush will conduct the appropriate industrial landfill post-closure care.

4.1 Maintenance of Final Cover

Facility maintenance and monitoring of land and water constituents will be conducted for a period of 30 years after closure. The landfill cover and surrounding areas will be inspected and repaired by Brush or Brush contractor on a quarterly basis for the first year, then semi-annually for 29 years thereafter. The Post-Closure Inspection Form is shown in Attachment #1.

4.1.1 Repairs

During landfill inspections, if any settlements, subsidence or erosion areas are found on the cover, they will be promptly backfilled with onsite compatible (similar permeability) soil. After final grading, the area will be re-vegetated with the prescribed native seed mix. If there are areas of inherent erosion it will be documented on the Landfill Inspection Form and addressed by re-grading and placement of appropriate cover material. To prevent integrity breaks in the cover due to mechanical agitation, notices will be posted and access will be limited to inspection, maintenance, and monitoring personnel. Repairs will be made promptly with the appropriate soil, rip rap, or other necessary materials that will be compatible to the immediate environmental factors that cause breeches in the cover integrity.

4.1.2 Prevention of Run-On and Run-Off

Because the landfill is part of the tailings pond system that is completely raised and enclosed, there is no potential for run-on from a 25-year storm event and there is more than adequate capacity to contain any run-off from a 25-year storm event.

4.1.3 Maintenance and Operation of Leachate Collection System

There is a leachate collection system that is a part of the Groundwater Permit. See Appendix B.

4.1.4 Monitoring of Surface and Groundwater

Groundwater monitoring for Class IIIb landfills are exempt by R315-304-5(4)(c). Surface water monitoring is not required.

4.1.5 Monitoring of Gases

Because of low moisture content and minimal putrescible waste, generation of gases is not expected, and thus monitoring of gases is not applicable.

4.2 Post-Closure Care Statement

Brush will conduct post-closure monitoring and maintenance care as necessary or as directed by the Executive Secretary for a period of 30 years from date of closure. Reduction or extension of the 30 year monitoring and maintenance care period may be negotiated between the Executive Secretary and Brush management.

4.3 Post-Closure Use Statement

Post-Closure use is anticipated to be very minimal. Post-Closure use will not increase the foreseeable threat to public health.

4.4 Post-Closure Certification

Brush will submit written verification following the closure of a landfill unit and following the completion of post-closure care of a landfill unit. This verification will state the completed activities are in accordance with the requirements of R315-302-3(7)(b).

5.0 Submittal Statement

The Closure Plan, Post-Closure Plan, and other necessary documents were prepared and submitted to the Division of Solid and Hazardous Waste.

No subsequent modification to the Closure and post-Closure Plan will be made without the approval of Executive Secretary. Brush reserves the right to petition to amend the Post-Closure Plan.

Brush will keep a copy of the most recent approved Closure Plan and Post-Closure Plan at the Delta Mill Offices.

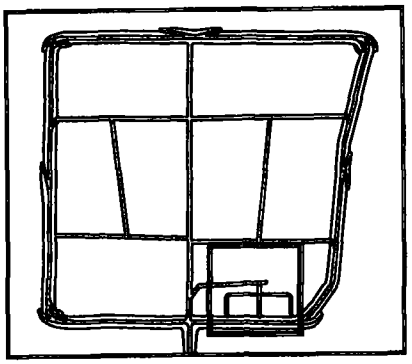
Attachment #1: Post-Closure Landfill Inspection Form

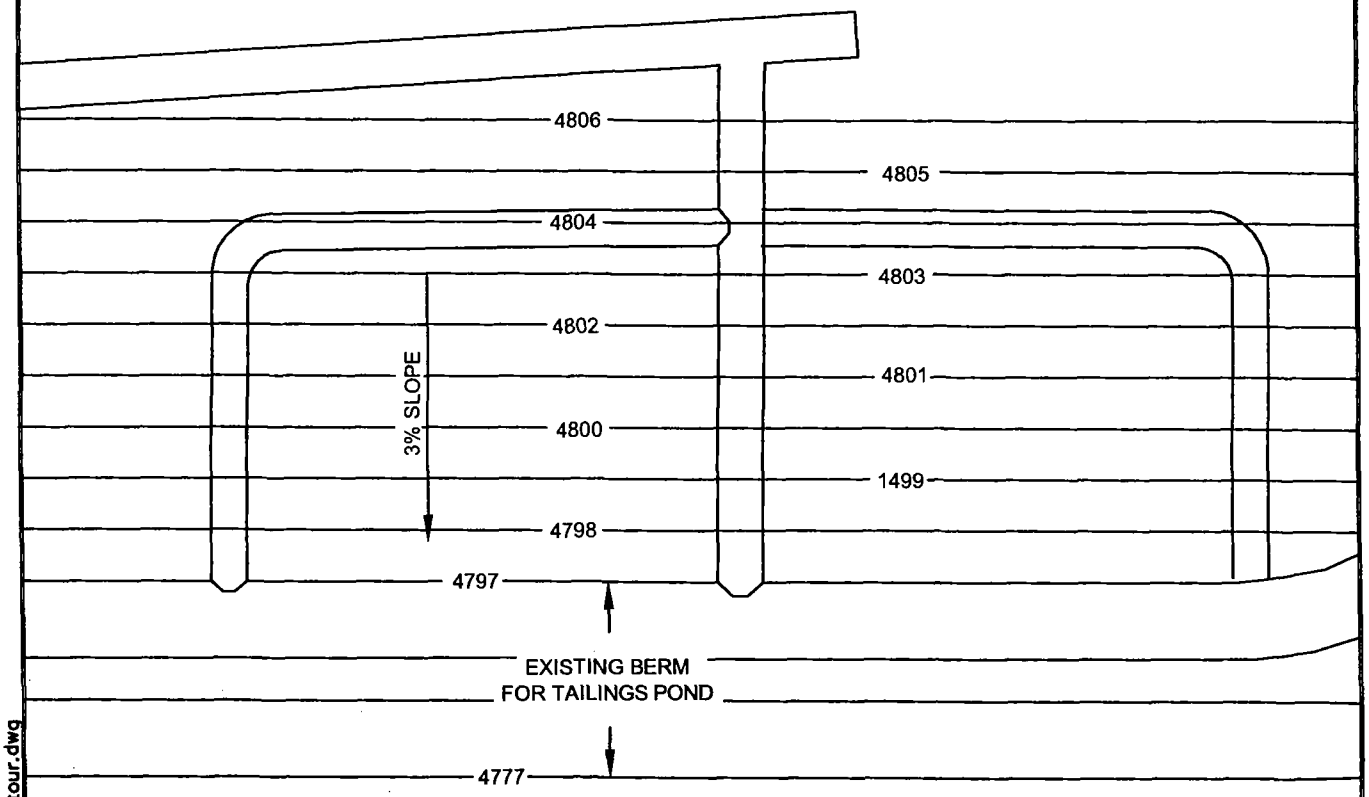
Brush Resources Delta Mill **Landfill Inspection Form**

Date	Time	Landfill Cell	Name	Signature	Inspect for: malfunctions, deterioration, operator errors, discharges that cause or may cause a threat to human health or the environment, any other abnormal conditions

PLEASE PRINT ALL INFORMATION

Attachment #2: Landfill Closure Plan – Final Facility Topography





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BRUSH RESOURCES

FIGURE 3
LANDFILL FINAL CONTOUR

jbr environmental consultants, inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	LAST REVISION DATE
DB	CP	1"=100'	02/23/09	

drawings\Brush\Landfill\Fig3 Landfill Final Contour.dwg

Attachment #3: Landfill Closure and Post – Closure Costs Spreadsheets

COST ESTIMATE FOR CLOSURE OF TAILINGS IMPOUNDMENT - BRUSH RESOURCES (2/11/09)

Note : Numbering format follows the DSHW "Preparation of Closure - Post Closure Cost Estimate Guidance"
The numbered items in the guidance document not shown in this estimate denote they are not applicable.

	Item	Unit Measure	Cost/Unit	No. Units	Total Cost	Source	Note
1.0	Engineering & Preliminary						
	Site Work						
1.1	Topographic Survey	acre	525	200	$ 105,000	Means2009 - 02 21 13.09 0020	
1.4	Development of Plans						see Subtotal calcs below
1.5	Contract Administration						see Subtotal calcs below
1.6	Administrative Costs for						see Subtotal calcs below
	final cover certification &						
	closure notice						
1.7	Project Management						see Subtotal calcs below
1.12	Remove Equipment				84210		see note (d)
	Subtotal				$ 189,210		
	10% Contingency				18,921		
	Engineering Subtotal				$ 208,131		

	Item	Unit Measure	Cost/Unit	No. Units	Total Cost	Source	Note
2.0	Construction						
2.1	Final Cover System						
2.1.1a	Soil Placement	cu yd	1.19	322667	$ 383,973	Means2009 - 31 23 16.46 5000	dozer costs-note (b)
2.1.1e	Soil Transportation	cu yd	3.65	322667	$ 1,177,733	Means2009 - 31 23 16.50 2100	scraper costs-note (b)
2.2	Completion of Top Cover						
2.2.1	Infiltration Layer						
2.2.1a	Soil Placement	cu yd	1.19	161333	$ 191,987	Means2009 - 31 23 16.46 5000	dozer costs-note (b)
2.2.1e	Soil Transportation	cu yd	3.65	161333	$ 588,867	Means2009 - 31 23 16.50 2100	scraper costs-note (b)
2.3	Erosion Layer Placement						
2.3.2	Soil Placement	cu yd	1.19	161333	$ 191,987	Means2009 - 31 23 16.46 5000	dozer costs-note (b)
2.3.5	Soil Transportation	cu yd	3.65	161333	$ 588,867	Means2009 - 31 23 16.50 2100	scraper costs-note (b)
2.4	Revegetation						
2.4.1,2,3	Seeding, Fertilize,Mulch	acre	1493	200	$ 298,600	Brush mine reclam costs	see note (a) calcs tab
2.5	Site Grading and Drainage	cu yd	1.19	20000	$ 23,800	Means2009 - 31 23 16.46 5000	dozer costs
	Subtotal				$ 3,445,813		
	10% Contingency				344,581		
	Construction Subtotal				$ 3,790,395		

3.0	**Gas Collection System is not applicable for this site**						

	Item	Unit Measure	Cost/Unit	No. Units	Total Cost	Source	Note
4.0	Monitor Well Costs						
	Refer to Post Closure Costs for Well Abandonment costs						

CALCULATION OF TOTAL CLOSURE COSTS							
	Engineering Total				$ 208,131		
	Construction Total				$ 3,790,395		
	SUBTOTAL				$ 3,998,526		
1.4	Development of Plans	2.5% of Subtotal			99,963		
1.5	Contract Administration	3.5% of Subtotal			139,948		
1.6	Administrative Costs for	3.5% of Subtotal			139,948		
	final cover certification &						
	closure notice						
	Project Management	3.5% of Subtotal			139,948		
	Performance Bond	1.0% of Subtotal			39,985		
	Legal Fees	10% of Subtotal			399,853		
	GRAND TOTAL CLOSURE COSTS (for 200-acre tailings pond)				$ 4,958,172		
	CLOSURECOST FOR LANDFILL (3 acres)	$4,958,172 x (3/200) =			**$74,373**		

COST ESTIMATE FOR POST- CLOSURE OF TAILINGS IMPOUNDMENT - BRUSH RESOURCES (2/11/09)

Note : Numbering format follows the DSHW "Preparation of Closure - Post Closure Cost Estimate Guidance"
The numbered items in the guidance document not shown in this estimate denote they are not applicable.

	Item	Unit Measure	Cost/Unit	No. Units	Total Cost	Source	Note
1.0	Engineering Costs						
1.2	Site Inspection and Record	hours	77.00	720	55440		see Note (e)
	keeping						
1.4.1a	Ground Water Sample	hours	77.00	720	55440		see Note (f)
	Collection						
1.4.1b	Ground Water Sample	sample/ ea	1200	420	504000		see Note (g)
	Analysis						
1.4.1c	Ground Water Sample	hours	66.35	180	11943		see Note (h)
	Analysis Review&Reporting						
2.0	Maintenance Costs						
2.1.1	Soil Replacement	cu yd	3.65	40333	147217	Means2009 - 31 23 16.50 2100	scraper costs
2.1.2	Vegetation Reseeding	acres	1493	50			see Notes (a) & (j)
3.0	Monitor Wells abandonment						
3.2	Final Plugging of Ground	LF	8.40	6445	$ 54,138	Means2009 - 02 41 13.76 0900	see note (c) for total LF
	Water Monitor Wells						
	Subtotal				828178		
	10% Contingency				82818		
	Post-Closure Care Total				$ 910,995		

TOTAL CLOSURE AND POST-CLOSURE COSTS FOR ENTIRE 200-ACRE TAILINGS POND					
Total Closure Costs				$ 4,958,172	
Total Post-Closure Costs				$ 910,995	
Total Cost				$ 5,869,167	

TOTAL CLOSURE AND POST-CLOSURE COSTS FOR ENTIRE 3-ACRE LANDFILL					
Total Closure Costs				$ 74,373	
Total Post-Closure Costs				$ 13,665	
Total Cost				**$ 88,038**	

Note (a)		The Brush Mine submitted a reclamation plan to DOGM containing a mulching, seeding, and fertilizing								
		cost/ac of $1300 in November 2006. The plan was subsequently approved.								
		Cost escalation from 2006 to 2009. Means Cost Index 2006 = 87.1. Means Cost Index 2009 = 100.0.								
		Therefore, escalation factor is *100/87.1 = 1.1481. Therefore, the 2009 cost = 1300 x 1.1481 = $1493*								

Note (b)		Cover Volumemetrics								
			area(acres)	sq yds	depth (in)	depth (yd)	cu yds			
		final cover	200	968000	12	0.3333	322667			
		top cover	200	968000	6	0.1667	161333			
		erosion cover	200	968000	6	0.1667	161333			

Note ©		Total Linear Feet - Monitor Wells								
		Well diameter	no. wells	ave. depth(ft)	total feet					
		2"	41	75	3075					
		4"	5	170	850					
		6"	36	70	2520					
			Total Linear Feet - Wells		6445					

Note (d)		Remove Equipment								
		Cyclone	length(ft)	width(ft)	height(ft0	cu ft	$/cu ft	total cost		
			50	50	25	62500	0.33	20625		
			Means 2009 02 41 16.13 0100							
		Surface Piping								
						linear ft	$/lin ft			
						20000	2.63	52600		
			Means 2009 02 41 13.38 1700							
		Electrical Boxes				# elec box	$/elec box			
						13	845	10985		
			Means 2009 26 05 05.10 1550							
					Remove Equipment TOTAL			84210		

Note (e)		Site Inspection and Record keeping								
			hrs/inspect	inspec/yr	# yrs inpect	total hours	$/hr-labor	$/hr- truck	$/hr total	
			12	2	30	720	66.35	10.65	77.00	
		Labor rate for Outside foreman Means 2009 p, 645								
		Pickup truck rate - Means 2009 01 54 33 40 7200								

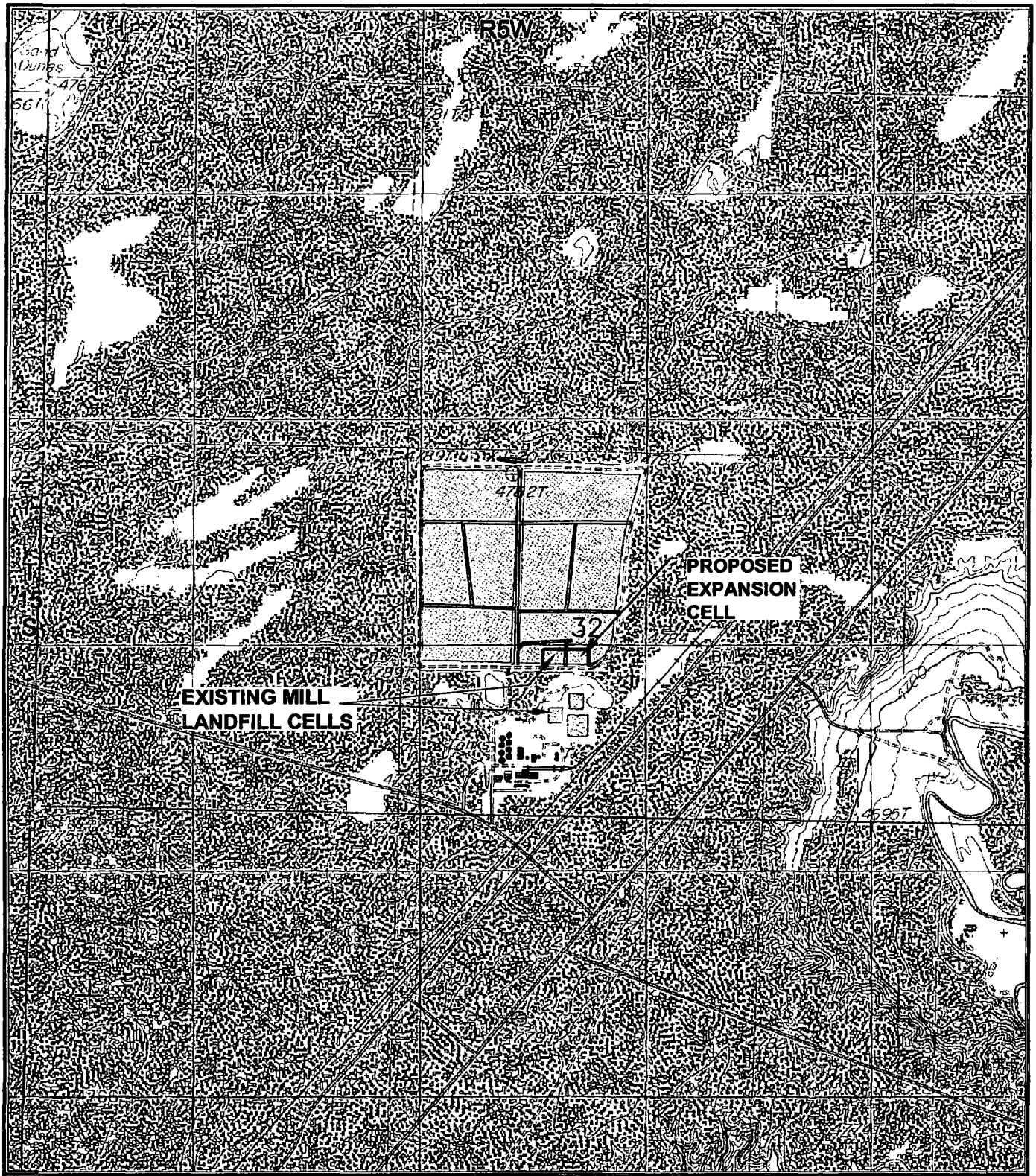
Note (f)		Ground Water Sample Collection								
			hrs/event	events/yr	no. years	total hours	$/hr-labor	$/hr- truck	$/hr total	
			12	2	30	720	66.35	10.65	77.00	
		Labor rate for Outside foreman Means 2009 p, 645								
		Pickup truck rate - Means 2009 01 54 33 40 7200								

Note (g)		Ground Water Sample Analysis								
			#samp/event	events/yr	no. years	tot samples	$/sample			
			7	2	30	420	1200			
		This is the current cost charged by Chemtech for Brush ground water sample analysis								

Note (h)		Ground Water Sample Analysis Review and Reporting								
			hrs/event	events/yr	no. years	total hours	$/hr-labor			
			3	2	30	180	66.35			
Note (i)		Soil Replacement								
		Assume 25% of total acreage at a depth of 6" would have to be replaced								
		area (acres)	sq yds	% replaced	depth (in)	depth (yd)	cu yds			
		200	968000	0.25	6	0.1667	40333			
Note (j)		Vegetation Reseeding								
		Assume 25% of total acreage would have to be reseeded								
							acres			
					area (acres)	% reseeded	resseded			
					200	0.25	50			

Appendix A

Maps and Figures



TOPOGRAHIC BASE FROM USGS 7.5' QUADRANGLE: STRONG, UTAH, 1985

2000 0 2000 FEET

N

BRUSH RESOURCES

—

MILL LANDFILL LOCATIONS

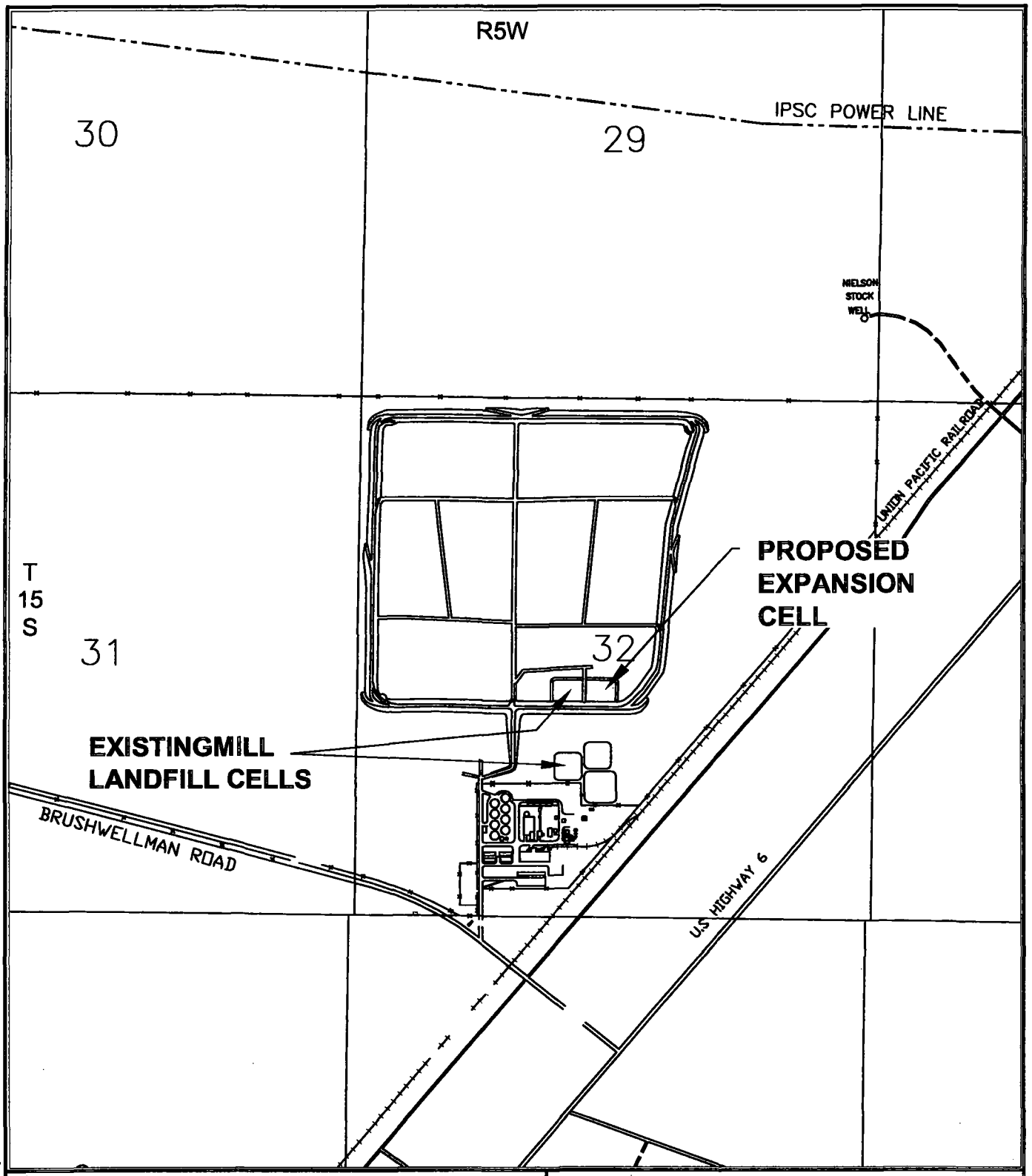
jbr environmental consultants, inc.

Salt Lake City, Utah Cedar City, Utah

DESIGN BY	DRAWN BY	CH'D BY	SCALE
WF	CP		1"=2000'

DATE DRAWN	4/25/03
REVISION	06/06/08

drawings \BRUSH\BRUSH-06\topo_r1.DWG



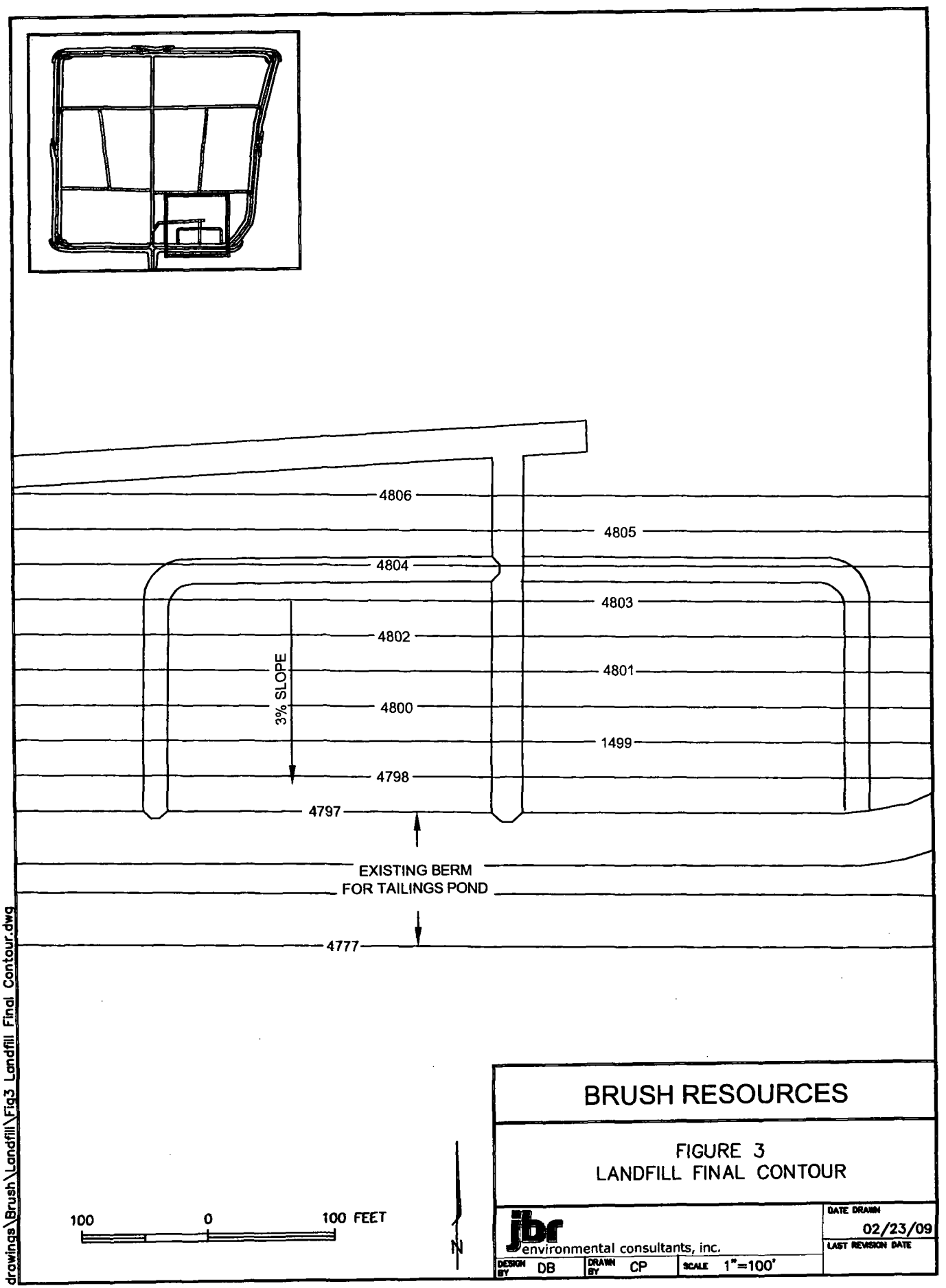
BRUSH RESOURCES

MILL LANDFILL LOCATIONS

jbr environmental consultants, inc.
Salt Lake City, Utah | Cedar City, Utah | Reno, Nevada | Elko, Nevada | Boise, Idaho

DESIGN BY	DRAWN BY	CH'D BY	SCALE	DATE DRAWN	REVISION
WF	CP		1"=1400'	9/19/02	06/06/08

drawings \BRUSH\BRUSH-06\LAND_r1.DWG



drawings\Brush\Landfill\Fig3 Landfill Final Contour.dwg

BRUSH RESOURCES

FIGURE 3
LANDFILL FINAL CONTOUR

jbr environmental consultants, inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	LAST REVISION DATE
DB	CP	1"=100'	02/23/09	

Appendix B

Renewal Application, Ground Water Discharge Permit

No. UGW27001, Pages 4-5

6. Monitoring well construction is described in the following documents:

   a. *Geohydrology of the Brush Wellman Tailings Pond Site, March 16, 1987*

   b. *Brush Wellman Tailings Pond Site Geohydrology and Geochemistry, February 2, 1993*

   c. *Brush Wellman Tailings Pond Site Geohydrology and Geochemistry, January 22, 1999*

7. The parameters that are monitored by Brush Wellman have been established in the past by the Division of Water Quality in the permit and are listed in the *Brush Wellman Compliance and Technology Performance Monitoring Sampling Plan, February 11, 1998.*

J. Description of Operations:

The design and operation of the approved DMT was described in the *Best Available Technology Report for the Brush Wellman Delta Mill Tailings Pond, April 15, 1993.* The plans and specifications for the construction, modification and operation of the tailings disposal and seepage mound recovery systems have been submitted in the past to the Division of Water Quality and were approved by the agency on March 17, 1994. In the implementation of the approved DMT, the following modifications were made to the tailings facilities:

1. The tailings dam was raised from 15 to 28 feet using downstream construction methods according to plans and specifications approved by the Division of Water Quality and the Utah State Engineer. The dam was raised with soil borrowed from on site adjacent to the tailings pond. The inner surface of the tailings dam was protected as necessary from erosion with rip rap. This work was completed in June, 1994.

2. The interior of the tailings pond was divided into eight separate cells through the construction of approximately14,000 linear feet of dikes. These dikes were constructed on top of PVC membrane liners with tailings solids dredged from within the tailings pond. The dikes ranged from 6 to 8 feet high with a top width of about 5 feet.

3. A series of piping systems were constructed around the entire tailings dam and on the interior dikes to allow transportation of tailings and tailings water throughout the tailings facility. A peripheral pipe completely around the tailings pond was fitted with spigots and valves for future peripheral discharge of tailings. This system is currently used to transport tailings water from one cell to another to control water levels within cells and to enhance evaporation by spreading the water over a greater area in multiple cells.

4. An electrical supply system was installed around the tailings dam to provide power for portable pumps to control the distribution of tailings water within the various interior cells and for the pumps and other equipment in the tailings cyclone plant. A separate electrical system was installed to power the seepage mound recovery system.

5. A tailings cyclone plant was built in the center of the south tailings dam to process tailings slurry from the mill and separate it into sand and slime fractions. These materials are pumped to the desired cells within the tailings pond. This cyclone plant is automated to allow startup and shutdown both locally at the cyclone plant and remotely from the main mill building.

6. A seepage mound recovery system was installed west and southwest of the tailings pond. This system consists of 22 seepage mound recovery wells pumping into a common piping system which can transport the water to the mill and the tailings pond where it is used. This is an automated system that can be started and stopped both locally in the field and from the main mill building. The wells in this system have been extensively maintained to provide maximum pumping performance and many of them have been redrilled.

7. A computer control system was installed to operate and record the performance of the seepage mound recovery and tailings cyclone facilities.

The DMT system was put into operation on September 1, 1995.

K. Ground Water Hydrology:

The ground water hydrology at the tailings pond site has been described in the following documents that have been submitted to the Division of Water Quality:

1. *Geohydrology of the Brush Wellman Tailings Pond Site, March 16, 1987*

2. *Brush Wellman Tailings Pond Site Geohydrology and Geochemistry, February 2, 1993*

3. *Best Available Technology Report for the Brush Wellman Delta Mill Tailings Pond, April 15, 1993*

4. *Geohydrology of the Brush Wellman Tailings Pond Site, January 22, 1999*

L. Compliance Sampling Plan:

Compliance sampling is described in the permit and in the, *Brush Wellman Compliance and Technology Performance Monitoring Sampling Plan, February 11, 1998.*

Appendix C

2004 Groundwater Discharge Permit

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
UTAH WATER QUALITY BOARD
SALT LAKE CITY, UTAH 84114-4870

GROUND WATER DISCHARGE PERMIT RENEWAL
Permit No. UGW270001

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

Brush Resources, Inc.
P.O. Box 815
Delta, Utah 84624

is granted a ground water discharge permit for the operation of a beryllium mill tailings pond located 10 miles northeast of Delta, Utah. The facility is located on a tract of land within the NE¼ of Section 32, Township 15 South, Range 5 West, Salt Lake Base and Meridian, Millard Co., Utah.

The permit is based on representations made by the permittee and other information contained in the administrative record. It is the responsibility of the permittee to read and understand all provisions of this permit.

The tailings pond shall be operated and revised in accordance with conditions set forth in the permit and the Utah Ground Water Quality Protection Regulations.

This permit shall become effective August 17, 2004.

This permit shall expire at midnight August 16, 2009.

Executive Secretary
Utah Water Quality Board

Table of Contents

I. SPECIFIC PERMIT CONDITIONS

A. Ground Water Classification

The ground water classification of the upper artisan aquifer under the tailings pond is Class I quality ground water for the upgradient wells and downgradient wells DH-55 and DH-56. Downgradient well DH-57 contains Class II quality ground water. Ground water at each compliance monitoring well has been classified based on historical monitoring data.

B. Ground Water Protection Levels

Ground Water Protection Levels for compliance monitoring wells for this permit are represented in Table 1. Protection levels are based on background sampling performed to date and on the requirements of the criteria of R314-6-4. Protection Levels are based on the greater of the protection level or the compliance limit (mean background plus twice the standard deviation).

C. Permitted Facility

The tailings pond at the Brush Resources beryllium mill facility is authorized by this permit. The tailings pond is approximately 220 acres in area and contains finely ground bertrandite ore and waste rock. This facility constitutes those, not permitted by rule, where there is potential for release of fluids to ground water. Any further modification by Brush Resources to the present facilities that have the potential to affect groundwater as prescribed in Part I.D will require both modification of this permit and a construction permit.

D. Permit Limits

The permittee shall comply with all the permit limits established from the ground water quality standards contained in Utah's Ground Water Quality Protection Regulations (R317-6). The parameters, background concentrations, and compliance limits are presented in Table 2 and are based on compounds that may be in a discharge from operation of the facilities. Protection levels in Table 1 are not to be exceeded in the downgradient monitoring wells screened in the upper artesian aquifer. An out-of-compliance condition with these permit limits is defined in Part I.I.2. Utah's Ground Water Quality Protection Rules also contain standards for other compounds such as metals, pesticides and volatile organic chemicals. The ground water around the mill site must meet all the applicable protection levels contained in R317-6 even though this permit does not require monitoring for each specific chemical listed in the regulations. Therefore, the permittee shall only discharge normal operation wastes to the tailings pond limited to slurry discharges from the tailings disposal tank, treated sanitary sewage, and other inert solid wastes from the mill operations that may contain beryllium. Discharge to the tailings pond of other compounds in other than deminimus concentrations including those defined (unless conditionally exempt) as hazardous wastes under UAC R315 such as paints, used oil, antifreeze, lab waste, metals, leachate, corrosives, pesticides or volatile organic compounds is prohibited under this permit. Changes in the current average composition of the waste stream must be reported to the Division within 5 days at the address in Part II D.

E. Discharge Minimization Technology Standard

The tailings pond must be operated and maintained according to the following standards.

1. The administration of the permit, to assure compliance with ground water protection regulations, is founded on the use of discharge minimization technology (DMT) defined in a report dated April 15, 1993 and in a subsequent Jan. 20, 1999 version by Brush Resources. In summary, the DMT for the tailings pond is:

   a) A dike capacity of the tailings pond to at least the year 2010.

   b) The interior tailings pond was sealed with approximately 24 inches of tailings slimes with an effective or hydraulic conductivity of 1×10^{-6} cm/s. The slimes were produced in a cyclone station and hydraulically transported and placed within separate cells that divide the tailings pond. This seal restricts seepage as it would be impossible to achieve zero discharge from the present tailing pond.

   c) There will be a continuous control of the total wastewater seepage mound volume. Discharge minimization technology should strive for an overall reduction in mound volume.

   d) The seepage mound will be pumped at a minimum extraction rate of at least an annual average of 250 acre-feet per year from the current well field located west, north and south of the tailings pond. The goal shall be to increase the pumped volume to the extent practicable based on 75% annual average availability of the seepage mound extraction pumping system. The pumped water will be evaporated in the tailings pond. If additional water can be pumped from the seepage mound, it will be utilized in the mill process or disposed of in the tailings pond.

   e) Enhancing evaporation to the maximum extent feasible within the tailings pond through a distribution system of pumps and piping.

   f) Using a piping system that spreads the whole tailings along a wider discharge area to enhance evaporation.

   g) The total amount of water discharged to the tailings pond from the plant shall not exceed an annual average of 1000 acre-feet per year.

F. COMPLIANCE AND TECHNOLOGY PERFORMANCE MONITORING

During the period beginning with the effective date of the permit and lasting the term of the permit or as stated in an approved closure plan, the permittee shall sample wells in the underlying upper artesian aquifer, monitor technology performance wells screened in the seepage mound beneath the tailings pond, and perform technology performance monitoring of the discharge minimization

technology of the tailings pond and the seepage mound recovery system.

1. Ground Water Quality Compliance Monitoring Points- Background water quality and compliance monitoring shall be conducted in the underlying upper artesian aquifer that could be affected by contaminated discharges into the aquifer, according to the provisions specified in the approved Compliance and Technology Performance Monitoring Plan. Protection levels are those for Class I and II ground water as specified in Table 1. The wells and monitoring schedules are specified as follows:

   a) Background monitoring well MW31, and upgradient wells DH14A and the Nielson Stock Well shall be sampled annually in the summer. Samples shall be analyzed for the parameters specified in Table 1. The well locations are shown in Figure 1 of the approved monitoring plan.

   b) Compliance monitoring wells DH-55, 56, and 57 are completed in the upper artesian aquifer downgradient of the seepage mound. They shall be sampled semi-annually and the samples analyzed for the parameters specified in Table 1.

2. Technology Performance Standard Monitoring- Brush Wellman shall perform the following technology performance monitoring according to the provisions specified in the approved Compliance and Technology Performance Monitoring Plan to determine if the use of DMT is controlling the seepage of tailings water to the seepage mound to the extent described in Part I.E.1.

   a) Monitor water levels in those wells tapping the seepage mound beneath the tailings pond on a quarterly basis, in order to monitor the seepage from the tailings pond as required by R317-6-6.4C. These wells shall include Drill Holes 7A, 8A, 9A, 10A, 11B, 12B, 13, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25B, 26, 28, 29, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52, and 53. In addition, the background and compliance monitoring wells listed in Part I.F.1 shall also be monitored at the same time. Their locations are shown on Figure 1 of the approved monitoring plan. Once per year, the water level readings from these wells will be used to recalculate the volume of the seepage mound according to the provisions specified in the approved monitoring plan.

   b) Monitor pH of discharge to the tailings pond once each quarter.

   c) An operating log shall be kept of the seepage mound recovery system indicating which wells were pumping, how much water was being pumped to the tailings pond and how much water was being pumped to the mill process.

   d) An operating log shall be kept of the whole tailings pumping rate indicating the total daily slurry flow to the tailings pond.

   e) Technology performance monitoring data shall be submitted to the Executive Secretary as required in Part II G.

G. GROUND WATER COMPLIANCE MONITORING PROGRAM

Monitoring Procedures for Monitoring Wells- Monitoring shall be conducted by the permittee, according to the provisions of the currently approved **Brush Resources Compliance and Technology Performance Monitoring Sampling Plan** (monitoring plan) and in conformance with the following procedures, beginning with the date of this permit.

1. Sampling shall be conducted according to the provisions of the monitoring plan attached as Appendix A of this permit. This monitoring plan shall conform to RCRA Ground Water Monitoring Technical Enforcement Guidance Document and the requirement of UAC R3176-6.3L to assure the reliability and validity of the field and analytical data gathered as part of this program.

2. Groundwater samples shall be taken only after adequate removal or purging of standing water within the well casing has been performed. This shall consist of removal of three casing volumes. Field analyses shall be performed according to the monitoring plan

3. Laboratory Approval. All laboratory analyses shall be performed by a laboratory certified by the State of Utah to perform the tests required. Field analyses shall be performed according to the provisions of the approved monitoring plan.

4. Damage to Monitoring Wells. If any monitor well is damaged or is otherwise rendered inadequate for its intended purpose, the Executive Secretary, shall be notified within five days in writing.

5. Water Quality Sampling

a) Water quality sampling results for compliance monitoring shall be reported to the Executive Secretary as required in Part IIG:

b) *Constituents Sampled* - The following analysis shall be performed on all ground water quality samples collected:

i) Field Measurements: pH, specific conductance, temperature

ii) Laboratory Analysis:

- TDS total dissolved solids
- Ions: fluoride, sulfate, nitrate, nitrite

- Metals (dissolved): arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc
- Radionuclides: radium 226, radium 228, thorium 230, thorium 232, uranium, gross alpha, gross beta

c) *Water Level Measurement* - In association with each well sampling event, water level measurements shall be made in each monitoring well prior to removal of any water from the well bore. These measurements will be made from a permanent single reference point clearly marked on the top of the well or surface casing. Measurements will be made to the nearest 0.01 foot.

H. REPORTING REQUIRMENTS

1) A summary report of construction and the seepage mound water levels and seepage mound volume for the previous calendar year as described in Part I F.2.a will be submitted annually on July 15 which includes:

   i. Description of construction

   ii. Information on water levels and potentiometric surface of seepage mound and compliance monitoring well data.

   iii. Calculations and maps of previous years data and compilation of historical data for mound volume history, mound footprint, and water level and potentiometric profile information.

2) Copies of the operating logs described in Parts I F.2.b to F.2.e will be submitted with the monitoring reports according to the schedule in Part II D.

3) *Future Modification of the Monitoring Network* - If at any time the Executive Secretary determines the monitoring program to be inadequate for determining compliance with DMT, applicable permit limits or ground water protection levels, Brush Resources shall submit within 30 days of receipt of written notice from the Executive Secretary a modified monitoring plan that addresses the inadequacies noted by the Executive Secretary.

4) Within 60 days of completion and development of any new or replacement monitoring well, Brush Resources shall submit documentation demonstrating that the well construction is in conformance with the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1 (RCRA TEGD) Section 3.5

5) *Compliance Monitoring Period* - Monitoring shall continue throughout the life of this permit. For compliance monitoring wells that are installed during the term of this permit, monitoring shall commence upon completion of the well installation and development.

6) Electronic Filing Requirements - In addition to submittal of the hard copy data, above, the permittee will electronically submit the required ground water monitoring data in the electronic format to be specified by the Executive Secretary. The data may be sent by e-mail, floppy disc, modem or other approved transmittal mechanism.

7) Failure to submit reports within the time frame due shall be deemed as noncompliance and may result in enforcement action.

I. Demonstration of Compliance

1. Probable Out of Compliance for Ground Water Protection Levels - If the concentration of a pollutant from any compliance monitoring well sample exceeds the higher of the protection level or the compliance limit (Table 1) Brush Resources shall:

   a) Notify the Executive Secretary in writing within 30 days of receipt of the data;

   b) Initiate monthly sampling for the compliance monitoring well(s) that has exceeded the higher of the protection level or the compliance limit (Table 1), unless the Executive Secretary determines that other periodic sampling is appropriate, for a period of two months or until the compliance status of the facility can be determined.

2. Out of Compliance Status for Ground Water Protection Levels

   Out of compliance status exists when:

   a) Two or more consecutive samples from a compliance monitoring well exceed the protection level and the compliance limit for a pollutant (Table 1); or

   b) The concentration of any pollutant in two or more consecutive samples is statistically significantly higher than the applicable protection level. Statistical significance shall be determined using methods described in Statistical Methods for Evaluating Ground Water Monitoring Data from Hazardous Waste Facilities, Vol. 53, No. 196 (Federal Register, Oct. 11, 1988)

3. Upon determining that an out of compliance situation exists, Brush Resources shall:

a) Notify the Executive Secretary of the out of compliance status within 24 hours of detection followed by a written notice within 5 days of the detection.

b) Initiate monthly sampling unless the Executive Secretary determines that other periodic sampling is appropriate until the facility is brought into compliance.

c) Submit a Source Assessment and Compliance Schedule to the Executive Secretary within 30 days of detection of the out of compliance status that outlines the following:

i. Steps of action that will assess the source, extent, and potential dispersion of the contamination.

ii. Evaluation of potential remedial actions to restore and maintain ground water quality and ensure the protection levels or compliance limits will not be exceeded at that compliance monitoring point.

iii. Measures to ensure DMT will be re-established.

d) Implement the Source Assessment and Compliance Schedule as directed by the Executive Secretary.

4. Failure to Maintain Discharge Minimization Technology Required by Permit

a) Permittee to provide information - In the event that the permittee fails to maintain best DMT or otherwise fails to meet DMT standards as required by the permit, the permittee shall submit to the Executive Secretary a notification and description of the failure according to R317-6-6.123. Notification shall be given orally within 24 hours of the permittee's discovery of the failure of DMT, and shall be followed up by written notification, including the information necessary to make a determination under R317-6-6.16.C.2, within five days of the permittee's discovery of the failure of best available technology.

J. Non-Compliance for Discharge Minimization Technology

1. Brush Resources is required to maintain the Best Available Technology in accordance with the approved design and practice for this permit. Failure to maintain BAT or maintain the approved design and practice shall be a violation of this permit. In the event a compliance action is initiated against the permittee for violation of permit conditions relating to best available technology, Brush Resources may affirmatively defend against that action by demonstrating the following:

a) Brush Resources submitted notification in accordance with R317-6-6.13;

b) The failure was not intentional or caused by Brush Resources' negligence, either in action or in failure to act;

c) Brush Resources has taken adequate measures to meet permit conditions in a timely manner or has submitted for the Executive Secretary's approval, an adequate plan and schedule for meeting permit conditions; and

d) The provisions of UCA 19-5-107 have not been violated.

K. Compliance Schedule

1. A detailed closure plan for the tailings facility shall be submitted to the Executive Secretary at least 12 months before final termination of operations at the facility. The details will follow the preliminary closure plan of October 28, 1993.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part I shall be representative of the monitored activity.

B. Analytical Procedures. Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.12, unless other test procedures have been specified in this permit.

C. Penalties for Tampering. The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Reporting of Monitoring Results. Monitoring results obtained for each monitoring period specified in the permit, shall be submitted to the Executive Secretary, Utah Division of Water Quality at the following address no later than 45 days after the end of the monitoring period (unless specified otherwise in this permit):

State of Utah
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870
Attention: Ground Water Quality Program

The semiannual dates for reporting are January 15 and July 15.

E. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using approved test procedures as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.

G. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This

period may be extended by request of the Executive Secretary at any time.

I. Twenty-four Hour Notice of Noncompliance and Spill Reporting.

1. The permittee shall verbally report any noncompliance, or spills subject to the provisions of UCA 19-5-114, which may endanger public health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24 hour number, (801) 536-4123, or to the Division of Water Quality, Ground Water Protection Section at (801) 538-6146, during normal business hours (8:00 am - 5:00 pm Mountain Time).

2. A written submission shall also be provided to the Executive Secretary within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

3. Reports shall be submitted to the addresses in Part II D, Reporting of Monitoring Results.

J. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours, shall be reported at the time that monitoring reports for Part II D are submitted.

K. Inspection and Entry. The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under Section 19-5-115(2) of the Act a second time shall be punished by a fine not exceeding $50,000 per day. Nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

IV. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.

B. Anticipated Noncompliance. The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal or extension. The application should be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed as follows:

   a. For a corporation: by a responsible corporate officer;

   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

   c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,

b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to Authorization. If an authorization under Part IV G 2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV G 2. must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential by the permittee, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Executive Secretary. As required by the Act, permit applications, permits, effluent data, and ground water quality data shall not be considered confidential.

J. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

K. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

L. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

M. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-117 of the Act.

N. Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. If new ground water standards are adopted by the Board, the permit may be reopened and modified to extend the terms of the permit or to include pollutants covered by new standards. The permittee may apply for a variance under the conditions outlined in R317-6-6.4(D)

2. If alternate compliance mechanisms are required

3. If water quality of the facility is significantly worse than represented in the original permit application.

TABLE 1

Protection Levels for Groundwater

Parameter	G.W. Standard	DH-55		DH-56		DH-57	
		Compliance Limit	Protection Level	Compliance Limit	Protection Level	Compliance Limit	Protection Level
Arsenic	0.05	0.028	0.021	0.028	0.025	0.039	0.038
Barium	2	0.066	0.200	0.087	0.200	0.075	0.500
Beryllium	0.004	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.005	0.001	0.0006	0.001	0.0006	0.001	0.001
Chromium	0.1	0.005	0.010	0.005	0.010	0.005	0.025
Copper	1.3	0.010	0.130	0.010	0.130	0.010	0.325
Flouride	4	0.763	1.000	1.024	1.000	1.070	1.163
Lead	0.015	0.001	0.002	0.001	0.002	0.001	0.004
Mercury	0.002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001
Nitrate	10	0.402	1.000	0.100	1.000	0.100	2.500
Nitrite	1	0.025	0.100	0.005	0.100	0.019	0.250
Selenium	0.05	0.003	0.005	0.002	0.005	0.002	0.013
Silver	0.1	0.004	0.010	0.001	0.010	0.001	0.025
Sulfate	250	102	82	65	64	67	76
TDS	500	574	547	518	543	546	661
Zinc	5	0.040	0.500	0.010	0.500	0.034	1.250
pH	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5
Radium 226 pCi/L	5	0.896	0.621	1.116	0.640	0.899	1.25
Radium 228 pCi/L	5	2.217	1.182	1.305	1.047	1.359	1.25
Thorium 230 pCi/L	5	0.303	1.000	0.237	1.000	0.242	1.25
Thorium 232 pCi/L	5	0.088	1.000	0.110	1.000	0.085	1.25
Uranium, total pCi/L	30	5.5	4.5	0.934	3.0	1.6	7.5
Gross Alpha pCi/L	15	15	15	15	15	15	15

units: milligrams per liter (mg/L) unless otherwise noted. No units for pH

Protection Levels are based on the greater of *1.1 x measured background concentration* or *0.1 x the ground water standard*
DH-57 is 0.25 x the ground water standard

Compliance Limits are calculated from the mean of measured concentrations + 2 standard deviations

Revision Date: August 2004
Revision by: Utah Division of Water Quality

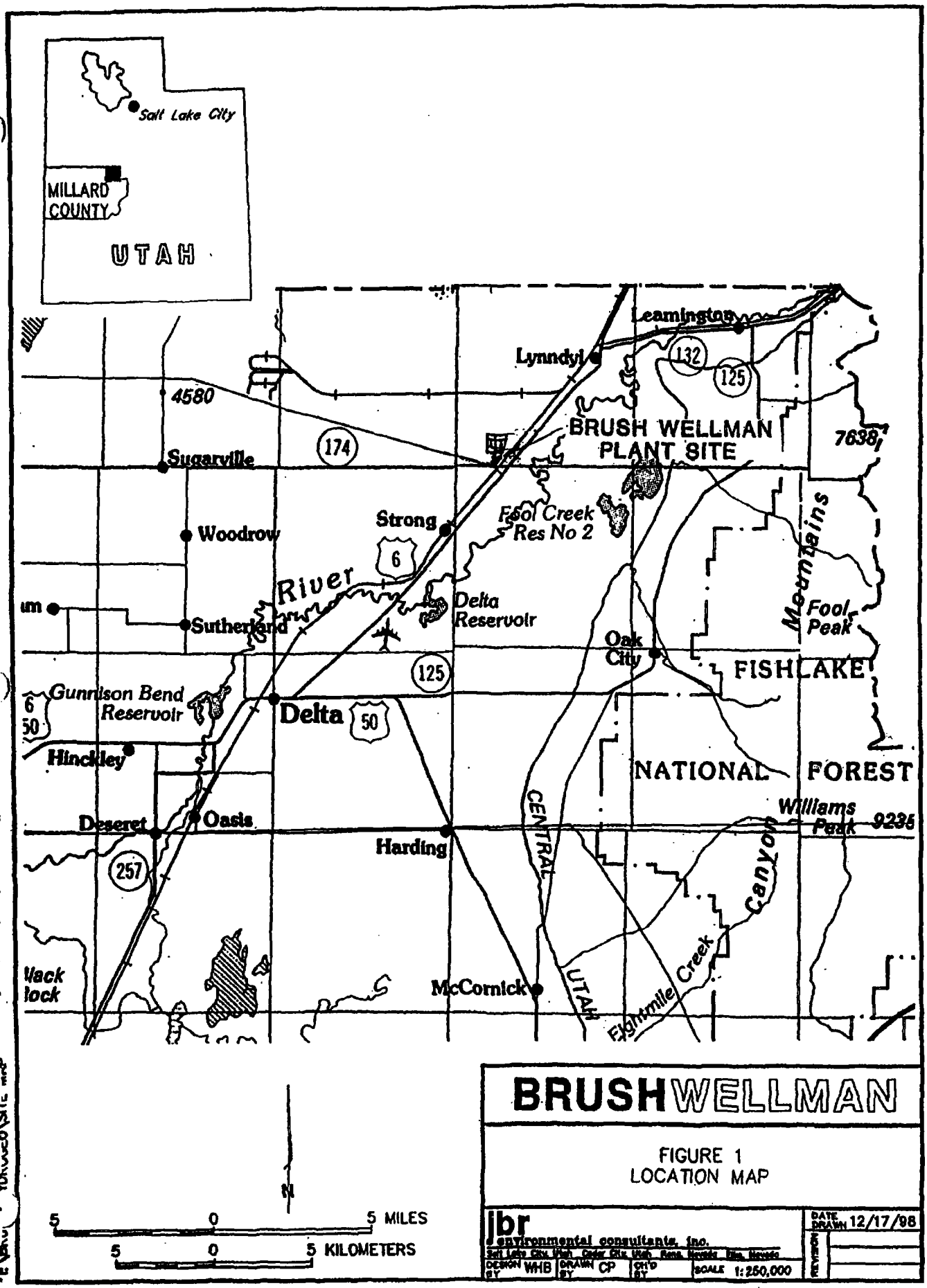
TABLE 2

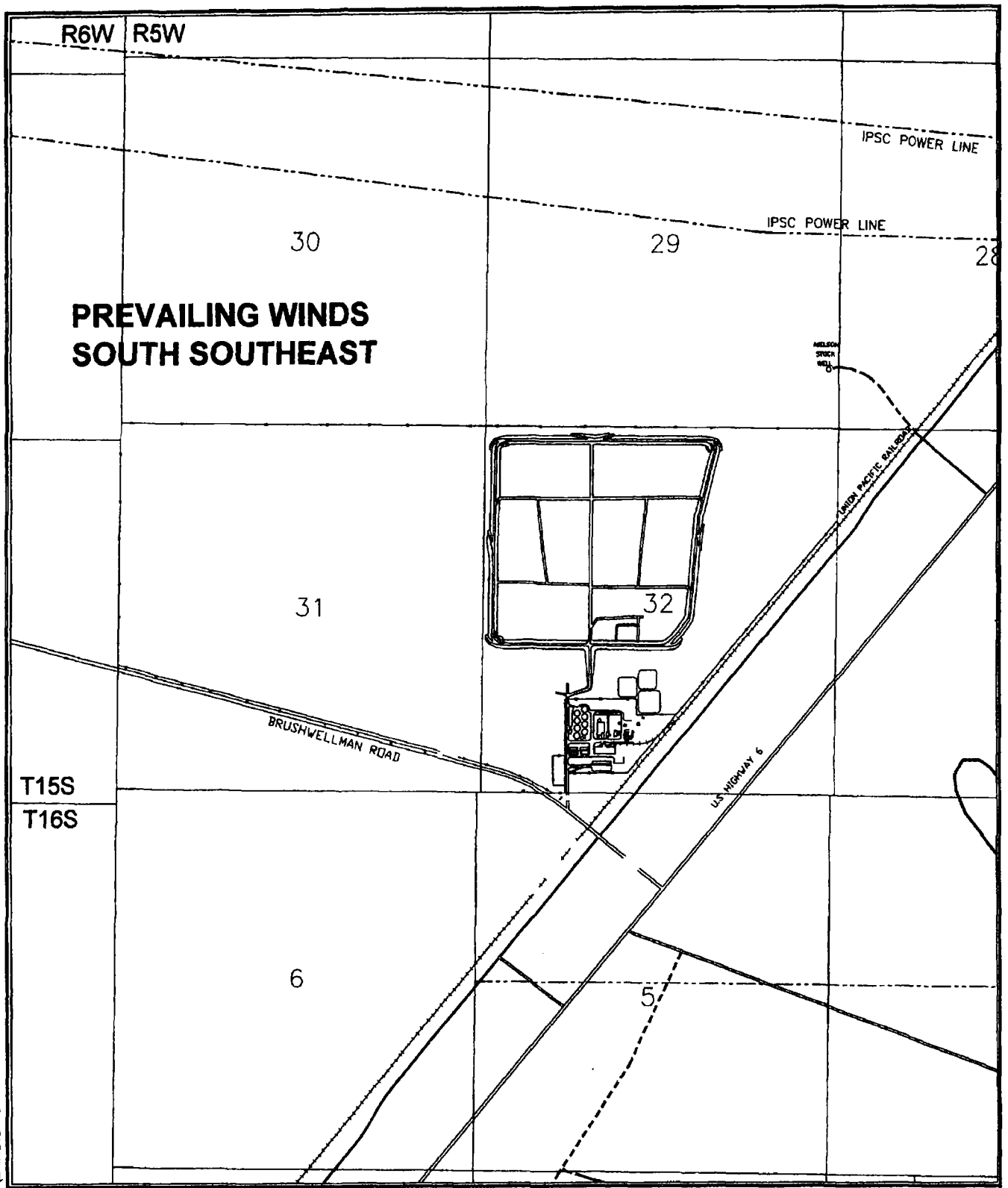
Groundwater Quality of Background Wells

Parameter	G.W. Standard	Limit of Detection	Stockwell		DH 14A		MW 31	
			Mean	Mean+ 2 std dev	Mean	Mean+ 2 std dev	Mean	Mean+ 2 std dev
Arsenic	0.05	0.0005	0.009	0.028	0.002	0.005	0.010	0.028
Barium	2.0	0.005	0.043	0.069	0.117	0.188	0.050	0.062
Beryllium	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.005	0.0005	0.007	0.016	0.001	0.001	0.006	0.016
Chromium	0.1	0.005	0.009	0.016	0.005	0.005	0.009	0.018
Copper	1.3	0.01	0.010	0.016	0.010	0.010	0.010	0.012
Flouride	4.0	0.1	0.345	0.428	0.555	0.753	0.370	0.421
Lead	0.015	0.001	0.010	0.030	0.004	0.007	0.010	0.031
Mercury	0.002	0.0002	0.000	0.002	0.000	0.001	0.000	0.002
Nitrate	10.0	0.1	0.291	0.659	0.210	0.584	0.137	0.409
Nitrite	1.0	0.005	0.006	0.009	0.034	0.126	0.011	0.056
Selenium	0.05	0.0005	0.003	0.008	0.001	0.002	0.003	0.008
Silver	0.1	0.0005	0.030	0.235	0.001	0.001	0.029	0.235
Sulfate	250	1	45	83	44	62	62	76
TDS	500	10	344	482	357	445	417	485
Zinc	5	0.01	0.057	0.205	0.038	0.099	0.110	0.564
pH	6.5 - 8.5	0.05	8.0	8.9	7.5	7.8	7.9	8.7
Radium 226 pCi/L	5	0.5	0.40	1.02	0.44	0.78	0.45	1.24
Radium 228 pCi/L	5	0.5	1.13	3.07	1.55	2.94	0.95	2.38
Thorium 230 pCi/L	5	1	0.86	2.04	1.11	2.62	1.00	3.40
Thorium 232 pCi/L	5	1	0.42	1.19	1.12	2.77	0.42	1.18
Uranium, total pCi/L	30	0.008	2.12	4.56	1.66	2.43	2.82	5.79
Gross Alpha pCi/L	15							

units: milligrams per liter (mg/L) unless otherwise noted. No units for pH

Revision Date: *August 2004*
Revision by: Utah Division of Water Quality


Salt Lake City
MILLARD COUNTY
UTAH
Learnington
Lynndyl
132
125
4580
BRUSH WELLMAN PLANT SITE
7638
Sugarville
174
Woodrow
Strong
Fool Creek Res No 6
River
Delta Reservoir
Sutherland
Oak City
Fool Peak
FISHLAKE
Gunnison Bend Reservoir
Delta
50
Hinckley
NATIONAL FOREST
Deseret
Oasis
Harding
Williams Peak 9235
257
CENTRAL
Canyon
Eightmile Creek
McCornick
UTAH
N
5 0 5 MILES
5 0 5 KILOMETERS
BRUSHWELLMAN
FIGURE 1
LOCATION MAP
jbr
environmental consultants, inc.
DESIGN BY WHB
DRAWN BY CP
CH'D BY
SCALE 1:250,000
DATE DRAWN 12/17/98
REVISION



2000 0 2000 FEET

N

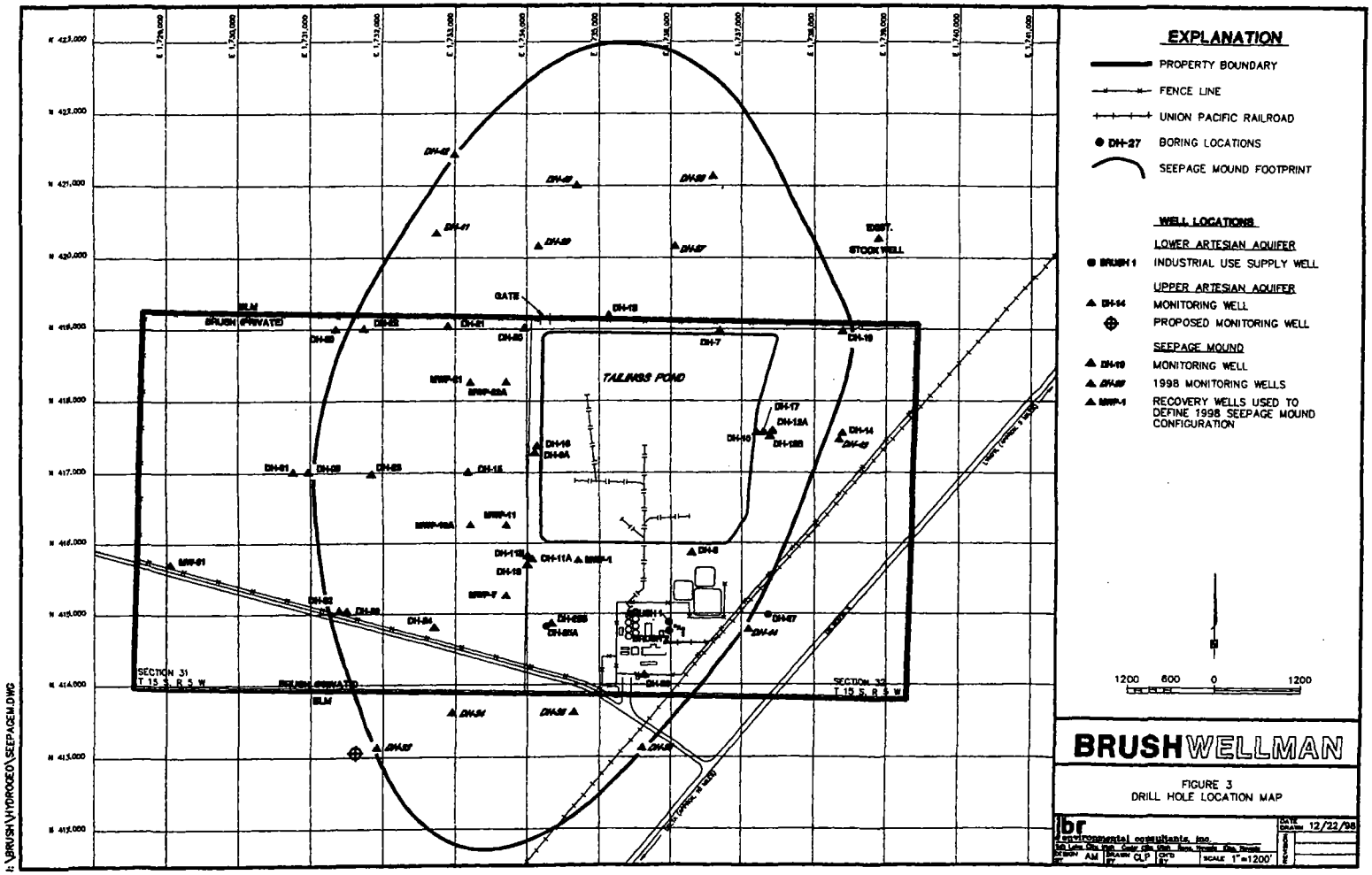
BRUSH RESOURCES

FIGURE 2
SITE MAP

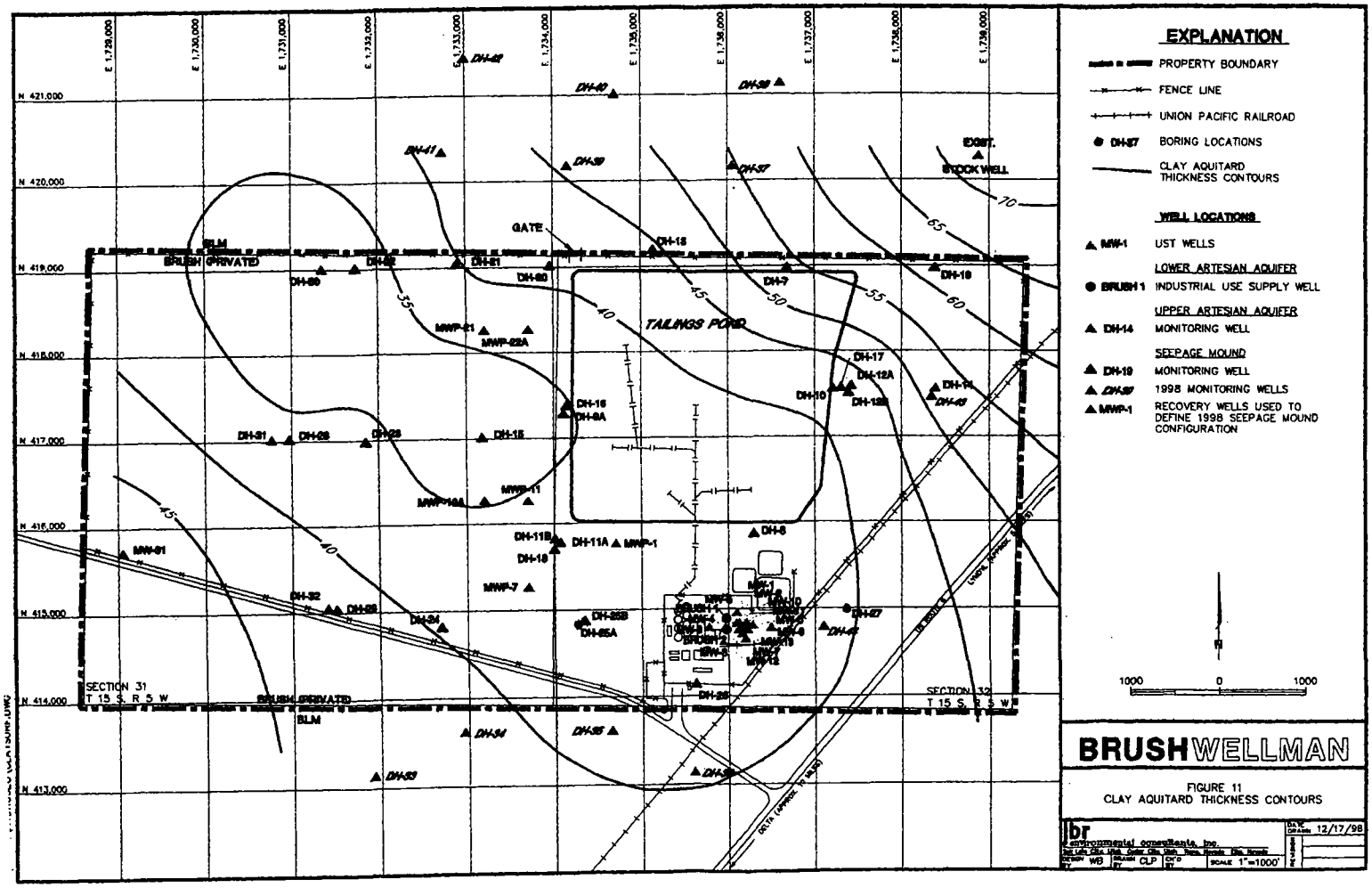
jbr environmental consultants, inc.
Salt Lake City, Utah Cedar City, Utah Reno, Nevada Elko, Nevada Boise, Idaho

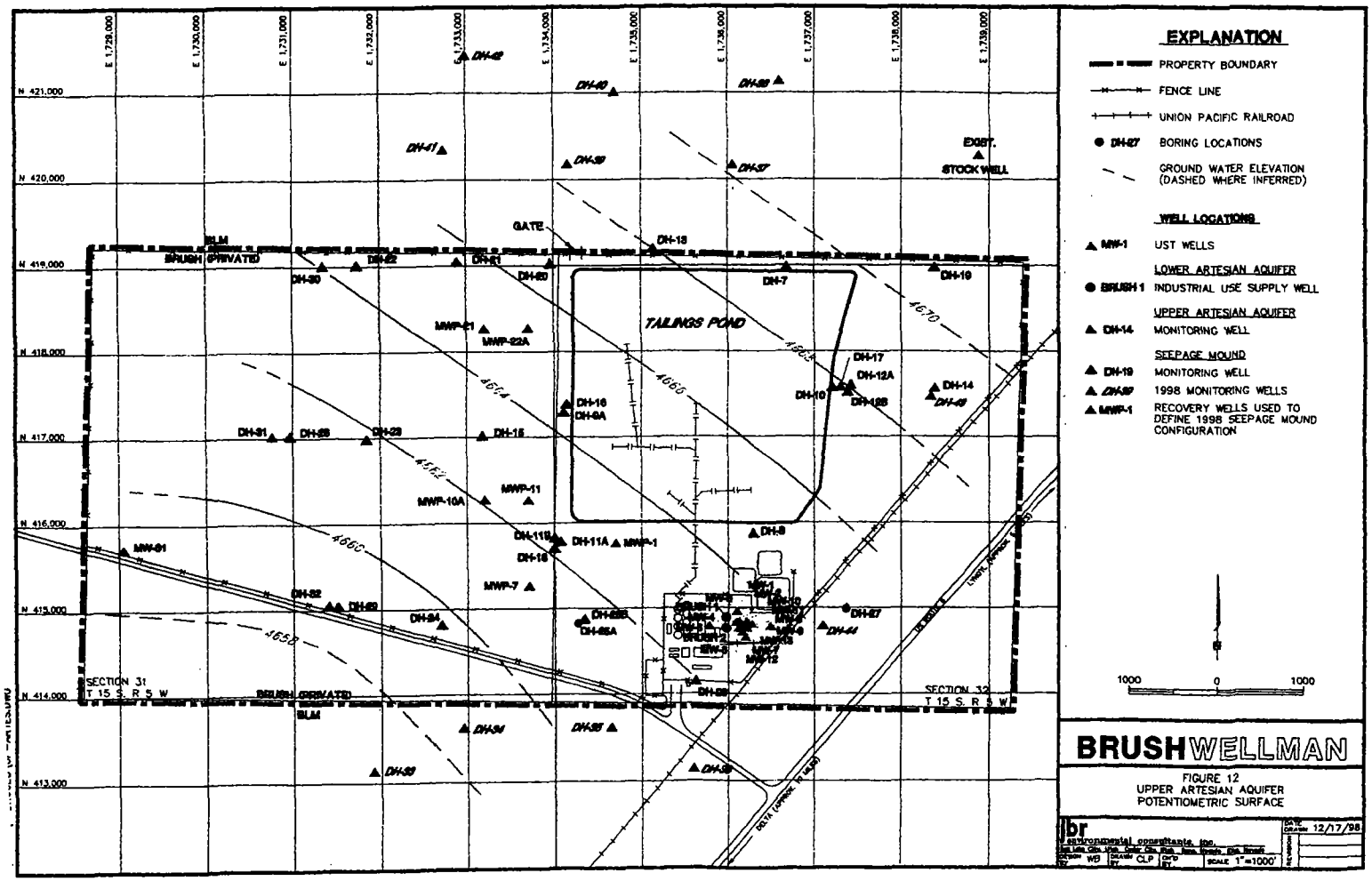
DESIGN BY	DRAWN BY	CH'D BY	SCALE	DATE DRAWN	REVISION
WF	CP		1"=2000'	9/19/02	

drawings \BRUSH\BRUSH-06\LAND.DWG



I:\BRUSH\HYDROGEO\SEEPAGEM.DWG


EXPLANATION
PROPERTY BOUNDARY
FENCE LINE
UNION PACIFIC RAILROAD
DH-67 BORING LOCATIONS
CLAY AQUITARD THICKNESS CONTOURS
WELL LOCATIONS
MW-1 UST WELLS
LOWER ARTESIAN AQUIFER
BRUSH 1 INDUSTRIAL USE SUPPLY WELL
UPPER ARTESIAN AQUIFER
DH-14 MONITORING WELL
SEEPAGE MOUND
DH-19 MONITORING WELL
DH-67 1998 MONITORING WELLS
MWP-1 RECOVERY WELLS USED TO DEFINE 1998 SEEPAGE MOUND CONFIGURATION
TAILINGS POND
GATE
EXIST. STOCK WELL
BLM
BRUSH (PRIVATE)
SECTION 31 T 15 S, R 5 W
SECTION 32 T 15 S, R 5 W
N 421,000
N 420,000
N 419,000
N 418,000
N 417,000
N 416,000
N 415,000
N 414,000
N 413,000
E 1,729,000
E 1,730,000
E 1,731,000
E 1,732,000
E 1,733,000
E 1,734,000
E 1,735,000
E 1,736,000
E 1,737,000
E 1,738,000
1000 0 1000
BRUSHWELLMAN
FIGURE 11
CLAY AQUITARD THICKNESS CONTOURS
br environmental consultants, inc.
SCALE 1"=1000'
12/17/98


EXPLANATION
PROPERTY BOUNDARY
FENCE LINE
UNION PACIFIC RAILROAD
DH-27 BORING LOCATIONS
GROUND WATER ELEVATION (DASHED WHERE INFERRED)
WELL LOCATIONS
MW-1 UST WELLS
LOWER ARTESIAN AQUIFER
BRUSH 1 INDUSTRIAL USE SUPPLY WELL
UPPER ARTESIAN AQUIFER
DH-14 MONITORING WELL
SEEPAGE MOUND
DH-19 MONITORING WELL
DH-59 1998 MONITORING WELLS
MWP-1 RECOVERY WELLS USED TO DEFINE 1998 SEEPAGE MOUND CONFIGURATION
1000 0 1000
TAILINGS POND
EXIST. STOCK WELL
GATE
BLM
BRUSH (PRIVATE)
SECTION 31 T 15 S, R 5 W
SECTION 32 T 15 S, R 5 W
4670
4660
4650
BRUSHWELLMAN
FIGURE 12
UPPER ARTESIAN AQUIFER
POTENTIOMETRIC SURFACE
br environmental consultants, inc.
DRAWN WB
DESIGN CLP
SCALE 1"=1000'
DATE 12/17/98

Appendix D

Log sheets

Section #1 - Landfill Waste Log

Section #2 - Inspections

Brush Resources Denver Min — Landfill Log — Cell 1 - Tailings Pond

Date	Name	Cover Applied? Y	N	Size of Load cubic yards	Contents of Load
				PLEASE PRINT ALL INFORMATION	

Brush Resources Delta Mill **Landfill Inspection Form**

Date	Time	Landfill Cell	Name	Signature	Inspect for: malfunctions, deterioration, operator errors, discharges that cause or may cause a threat to human health or the environment, any other abnormal conditions

PLEASE PRINT ALL INFORMATION

Appendix E

General Site Safety

and Training Plan Addendum

General Training and Site Safety Plan
Addendum for Landfill Operations

This plan was developed for the safety of landfill operators and operations at the Brush Resources, Inc. Mill Site, in accordance with Utah Department of Environmental Quality Administrative Code R315-302-2(2)(n).

Training will include the following topics:

1.0 Applicability
2.0 Frequency
3.0 Information and Awareness
4.0 Equipment Operation
5.0 Emergency Procedures and Notification

1.0 Applicability

A. All landfill operators must have received the general site safety training prior to receiving this training. (Note: During monthly safety meetings, waste identification and disposal methods are discussed).
B. All landfill operators will receive this training in addition to the general site safety training.
C. New or transferred employees who have landfill responsibilities will receive this training prior to working at the landfill.
D. A new or transferred employee who has not received this training may work at the landfill under the direct supervision of a trained landfill operator under: a) temporary or emergency conditions, or b) up to a period of 90 days, starting with the day the new or transferred employee began working at the landfill.

2.0 Frequency

A. All applicable employees will receive this training on an annual basis, or when significant changes occur at the landfill.

3.0 Information and Awareness

Training will include:

A. A review of the landfill permit conditions.
B. A list of acceptable and unacceptable waste for the landfill.
C. Guidelines for maintaining the landfill, (fill, cover, inspections, etc.)
D. Proper record keeping of wastes received.
E. Unacceptable waste procedures (discussed in the monthly safety meetings).
F. Alternative waste disposal in the event that the landfill is unavailable.

4.0 The Safety Officer or their designee will determine that all landfill operators are trained in the proper operation of all landfill equipment.

5.0 All landfill operators will be trained on proper landfill emergency notification procedures. Emergency procedures and/or contact numbers will be made available to all landfill operators.

Appendix F

Financial Assurance and Ownership Documentation

JPMorganChase

JPMorgan Chase Bank, N.A.
c/o JPMorgan Treasury Services
Global Trade Services
10420 Highland Manor Drive
Tampa, FL 33610

MAR 9, 2009
OUR L/C NO.: CLS410992
APPLICANT REF. NO.: CLS410992
AMENDMENT NO.: 1

TO:
UTAH DIVISION OF SOLID & HAZARDOUS WASTE
288 N 1460 WEST
PO BOX 144880
SALT LAKE CITY UT 84114-4880 USA

APPLICANT:
BRUSH RESOURCES INC
10 MILES NORTH HIGHWAY 6
DELTA UT 84624 USA

IN ACCORDANCE WITH INSTRUCTIONS RECEIVED, THE ABOVE REFERENCED STANDBY LETTER OF CREDIT HAS BEEN AMENDED AS FOLLOWS:

RECEIVER'S REFERENCE: NONREF

L/C INCREASED BY: USD73,000.00

THE AMOUNT OF THIS LETTER OF CREDIT HAS BEEN INCREASED TO A NEW AGGREGATE AMOUNT OF U.S.$89,000.00.

ALL OTHER TERMS AND CONDITIONS OF THE CREDIT REMAIN UNCHANGED.

AUTHORIZED SIGNATURE

JPMorgan

JPMORGAN CHASE BANK, N.A.
North America - Chicago

Date: 10-Mar-2009
TO: BRUSH ENGINEERED MATERIALS INCORPORATED
ATTN: Susan McDonald
Fax: 216-383-4918
Re: BRUSH ENGINEERED MATERIALS $240MM11/7/07 REVOLVING CREDIT

A Standby Letter of Credit issued under the captioned agreement has been increased. The details of the increase are as follows:

Borrower: BRUSH ENGINEERED MATERIALS INCORPORATED

Issuing Banks:

Name:JPMORGAN BRANCH - 0111
Address:10 South Dearborn
13th Floor
Chicago, IL 60603
United States
Agent Bank Standby Letter of Credit NO: S-634379
Effective Date: 9-Mar-2009
Increase amount and currency: USD 73,000.00
New Standby Letter of Credit balance amount and currency: USD 89,000.00

Other:

If you have any questions, please call the undersigned.

Thanks and regards,

PHYLLIS HUGGINS
Telephone #: 312-732-2592
Fax #: 312-732-2729

JPMorgan Loan Services

Transaction Details

L/C Reference Number	CTO[redacted]
Applicant Reference Number	CLS410992
Amendment Number	1
Original B1 L/C Number	CLS410992

Current Amount Details		Date Information	
Face Amount	USD 89,000.00	**L/C Expiry Date**	FEB 28, 2010
L/C Available Amount	USD 89,000.00	**Place of Expiry**	AT OUR COUNTER
Beneficiary Available Amount	USD 89,000.00	**Issue Date**	FEB 23, 2005
Transfer Available Amount	USD 0.00		
Total Liability O/S Amount	USD 89,000.00		
Nominal Rate	1.000000000 0		

Please be advised that we have received your inquiry and will begin our investigation immediately. We will respond back to you within 24 hours, if not sooner.
Please always respond to gts.client.services@jpmchase.com. Thank you for your consideration.

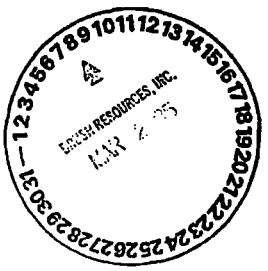
GTS Client Services Group
1-800-634-1969

JPMorgan Chase Bank, N.A.
Global Trade Services
One Bank One Plaza
Mail Code IL1-0236
Chicago, IL 60670
Tel: (800) 634-1969 Fax: (312) 954-0203
SWIFT: FNBCUS44
Telex: ITT4330253 FNBCUI

IRREVOCABLE STANDBY LETTER OF CREDIT NO. CLS410992 DATE: FEBRUARY 23, 2005

BENEFICIARY:
UTAH DIVISION OF
SOLID & HAZARDOUS WASTE
288 NORTH 1460 WEST
P.O. BOX 144880
SALT LAKE CITY, UTAH. 84114-4880
ATTN CARL WADSWORTH

DRAFTS DRAWN MUST BE MARKED
WITH OUR LETTER OF CREDIT NO. CLS410992
OPENER'S REFERENCE NO. CLS410992



GENTLEMEN:

BY THE ORDER OF:

APPLICANT:
BRUSH RESOURCES INC.
10 MILES NORTH HIGHWAY 6
DELTA, UTAH 84624
ATTN ALEX BOULTON

WE HEREBY ISSUE IN YOUR FAVOR OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO: CLS410992 FOR THE ACCOUNT OF BRUSH RESOURCES INC. FOR AN AMOUNT OR AMOUNTS NOT TO EXCEED IN THE AGGREGATE U.S. $16,000.00 (SIXTEEN THOUSAND AND NO/100 U.S. DOLLARS) AVAILABLE BY YOUR DRAFTS AT SIGHT ON JPMORGAN CHASE BANK, N.A., CHICAGO, IL EFFECTIVE FEBRUARY 23, 2005 AND EXPIRING AT OUR OFFICE ON FEBRUARY 28, 2006.

FUNDS UNDER THIS CREDIT ARE AVAILABLE AGAINST YOUR DRAFT(S) AS HEREIN ABOVE SET FORTH MARKED "DRAWN UNDER JPMORGAN CHASE BANK, N.A. LETTER OF CREDIT NO. CLS410992" AND ACCOMPANIED BY THE FOLLOWING:

BENEFICIARY'S SIGNED AND DATED STATEMENT READING AS FOLLOWS:

"BRUSH RESOURCES INC., HAS FAILED TO COMPLY WITH THE CLOSING PLAN R 315-310-3(1)(H) AND R 315-310-5 (2) AS DIRECTED BY THE UTAH DIVISION OF SOLID AND HAZARDOUS WASTE."

IT IS A CONDITION OF THIS LETTER OF CREDIT THAT THE EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR ONE (1) YEAR FROM THE EXPIRATION DATE HEREOF OR ANY FUTURE EXPIRATION DATE UNLESS AT LEAST SIXTY (60) DAYS PRIOR TO SUCH EXPIRATION DATE WE SEND NOTICE TO YOU BY CERTIFIED MAIL OR HAND DELIVERED COURIER, AT THE ADDRESS STATED ABOVE, THAT WE ELECT NOT TO EXTEND THIS LETTER OF CREDIT FOR ANY SUCH ADDITIONAL PERIOD.

WE ENGAGE WITH YOU THAT DRAFTS DRAWN UNDER AND IN CONFORMITY WITH THE TERMS AND CONDITIONS OF THIS CREDIT WILL BE DULY HONORED ON PRESENTATION IF PRESENTED ON OR BEFORE THE EXPIRATION AT OUR COUNTERS AT 300 SOUTH RIVERSIDE PLAZA, 7TH FLOOR, MAIL CODE IL1-0236, ATTN: STANDBY LETTER OF CREDIT UNIT, CHICAGO, IL 60606-0236. THE

JPMorgan Chase Bank, N.A.
Global Trade Services
One Bank One Plaza
Mail Code IL1-0236
Chicago, IL 60670
Tel: (800) 634-1969 Fax: (312) 954-0203
SWIFT: FNBCUS44
Telex: ITT4330253 FNBCUI

LETTER OF CREDIT NO.CLS410992 DATE: FEBRUARY 23, 2005

ORIGINAL LETTER OF CREDIT MUST ACCOMPANY THE DOCUMENTS REQUIRED UNDER THIS CREDIT FOR ENDORSEMENT.

THIS LETTER OF CREDIT IS GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, AND, EXCEPT AS OTHERWISE EXPRESSLY STATED HEREIN, TO THE INTERNATIONAL STANDBY PRACTICES, ICC PUBLICATION NO. 590 (THE "ISP98"), AND IN THE EVENT OF ANY CONFLICT, THE LAWS OF THE STATE OF NEW YORK WILL CONTROL, WITHOUT REGARD TO PRINCIPALS OF CONFLICT OF LAWS.

PLEASE ADDRESS ALL CORRESPONDENCE REGARDING THIS LETTER OF CREDIT TO THE ATTENTION OF THE STANDBY LETTER OF CREDIT UNIT, 300 S. RIVERSIDE PLAZA, 7TH FLOOR, MAIL CODE IL1-0236, CHICAGO, IL 60606-0236, INCLUDING THE LETTER OF CREDIT NUMBER MENTIONED ABOVE. FOR TELEPHONE ASSISTANCE, PLEASE CONTACT THE STANDBY CLIENT SERVICE UNIT AT 1-800-634-1969, SELECT OPTION 1, AND HAVE THIS LETTER OF CREDIT NUMBER AVAILABLE.

VERY TRULY YOURS,
JPMORGAN CHASE BANK, N.A.

PREPARER/AUTHORIZED SIGNER

AUTHORIZED SIGNER

WHEN RECORDED RETURN TO:
A. John Davis
Pruitt, Gushee & Bachtell
1850 Beneficial Life Tower
Salt Lake City, Utah 84111

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED, executed this 24th day of January, 2001, but effective as of January 1, 2001, from BRUSH WELLMAN INC., an Ohio corporation, Grantor, to BRUSH RESOURCES INC., a Utah corporation, with an address of P.O. Box 815, Delta, Utah 84624, Grantee.

WITNESSETH:

That the Grantor, for and in consideration of the sum of Ten Dollars ($10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby convey and warrant unto Grantee, its successors and assigns forever, the following described property situated in Millard County, Utah:

Township 15 South, Range 5 West, SLM

Section 31: All
Section 32: All

Together with all appurtenances, water and water rights, fixtures and improvements thereon and all privileges thereunto incident.

EXCEPTING THEREFROM and subject to the following prior reservations: (1) all coal and other minerals, together with the right of ingress and egress for the purpose of exploring and/or removing the same; (2) that portion lying within the boundaries of the State Road right-of-way; (3) that portion lying within the boundaries of the Railroad right-of-way.

Grantor warrants the subject lands against all liens and encumbrances by persons or parties claiming by, through, and under Grantor, but not otherwise.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal the day and year first above written.

00136660 Bk 00360 Pg 00540-00541
MILLARD COUNTY RECORDER- CONNIE K HANSEN
2001 FEB 01 15:21 PM FEE $13.00 BY SRO
REQUEST: PRUITT, GUSHEE & BACHTELL

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal the day and year first above written.

BRUSH WELLMAN INC.

By: Wm Christoff

Its: WM. CHRISTOFF
ASSISTANT TREASURER - TAXES

STATE OF Ohio)
:ss
COUNTY OF Cuyahoga)

On the 24th day of January 2001, personally appeared before me, William Christoff, who, being by me duly sworn, did say that he is the Assistant Treasurer of Brush Wellman Inc. and that said instrument was signed in behalf of said corporation by authority of a resolution of its Board of Directors and said William C. Christoff acknowledged to me that said corporation executed the same.

Witness my hand and official seal.

Linda J. Montgomery
NOTARY PUBLIC

My Commission Expires:

LINDA J. MONTGOMERY, Notary Public
State of Ohio
My Commission Expires Sept. 30, 2005

officelwcw\11450\341\doc\special warranty deed

00132660 Bk 00360 Pg 00541

Appendix G

Application Form and Checklist

Utah Class III Landfill Permit Application Form

Part I. General Information. APPLICANT: PLEASE COMPLETE ALL SECTIONS

I. Landfill Type		II. Application Type		
☐ Class IIIa	☒ Class IIIb	☐ New Application	☒ Facility Expansion	
		☒ Renewal Application	☐ Modification	

For Renewal Applications, Facility Expansion Applications and Modifications Enter Current Permit Number 0302

III. Facility Name and Location

Legal Name of Facility: Brush Resources, Inc.

Site Address (street or directions to site): 10 Miles North of Delta, Utah on Highway 6 | County: Millard

City: Delta | State: UT | Zip Code: 84624 | Telephone: (435) 864-2701

Township: 15S | Range: 5W | Section(s): 32 | Quarter/Quarter Section: | Quarter Section: NE 1/4

Main Gate Latitude: 39 degrees 28 minutes 22 seconds | Longitude: 112 degrees 26 minutes 7 seconds

IV. Facility Owner(s) Information

Legal Name of Facility Owner: Brush Resources, Inc.

Address (mailing): P. O. Box 815

City: Delta | State: UT | Zip Code: 84624 | Telephone: (435) 864-2701

V. Facility Operator(s) Information

Legal Name of Facility Operator: Alex Boulton, President

Address (mailing): P. O. Box 815

City: Delta | State: UT | Zip Code: 84624 | Telephone: (435) 864-2701

VI. Property Owner(s) Information

Legal Name of Property Owner: Brush Resources, Inc.

Address (mailing): P. O. Box 815

City: Delta | State: UT | Zip Code: 84624 | Telephone: (435) 864-2701

VII. Contact Information

Owner Contact: John Otto | Title: Engineering Manager

Address (mailing): Brush Resources, Inc. P. O. Box 815

City: Delta | State: UT | Zip Code: 84624 | Telephone: (435) 864-2701

Email Address: | Alternative Telephone (cell or other):

Operator Contact: same | Title:

Address (mailing):

City: | State: | Zip Code: | Telephone:

Email Address: | Alternative Telephone (cell or other):

Property Owner Contact: same | Title:

Address (mailing):

City: | State: | Zip Code: | Telephone:

Email Address: | Alternative Telephone (cell or other):

Utah Class III Landfill Permit Application Form

Part I General Information (Continued)

VIII. Waste Types (check all that apply)

☐ All types of non-hazardous industrial waste generated by the facility **OR** the following specific waste types

Waste Type	Combined Disposal Unit	Monofill Unit
☐ Construction & Demolition	☐	☐
☒ Industrial	☐	☒
☐ Incinerator Ash	☐	☐
☐ Animals	☐	☐
☐ Asbestos	☐	☐
☐ Other _____	☐	☐

Note: All waste types must be generated by the industry which owns the facility

IX. Facility Area

Facility Area	40	acres
Disposal Area	8.5	acres
Design Capacity		
Years	148	
Cubic Yards	202,931	
Tons	60,879	

X. Fee and Application Documents

Indicate Documents Attached To This Application ☐ Application Fee: Amount $

☒ Facility Map or Maps	☒ Facility Legal Description	☒ Plan of Operation	☒ Waste Description
☒ Ground Water Report	☒ Closure Design	☒ Cost Estimates	☒ Financial Assurance

I HEREBY CERTIFY THAT THIS INFORMATION AND ALL ATTACHED PAGES ARE CORRECT AND COMPLETE

Signature of Authorized Owner Representative Alex Boulton Alex Boulton Name typed or printed	Title: President Address: P. O. Box 815, Delta, UT 84624	Date: 6-26-08
Signature of Authorized Land Owner Representative (If applicable) Name typed or printed	Title Address	Date
Signature of Authorized Operator Representative (If applicable) Name typed or printed	Title Address	Date

Utah Class III Landfill Permit Application Checklist

Important Note: The following checklist is for the permit application and addresses only the requirements of the Division of Solid and Hazardous Waste. Other federal, state, or local agencies may have requirements that the facility must meet. The applicant is responsible to be informed of, and meet, any applicable requirements. Examples of these requirements may include obtaining a conditional use permit, a business license, or a storm water permit. The applicant is reminded that obtaining a permit under the *Solid Waste Permitting and Management Rules* does not exempt the facility from these other requirements.

An application for a permit to construct and operate a landfill is documentation that the landfill will be located, designed, constructed, operated, and closed in compliance with the requirements of Rules R315-304 of the *Utah Solid Waste Permitting and Management Rules* and the *Utah Solid and Hazardous Waste Act* (UCA 19-6-101 through 123). The application should be written to be understandable by regulatory agencies, landfill operators, and the general public. The application should also be written so that the landfill operator, after reading it, will be able to operate the landfill according to the requirements with a minimum of additional training.

Copies of the *Solid Waste Permitting and Management Rules*, the *Utah Solid and Hazardous Waste Act*, along with many other useful guidance documents can be obtained by contacting the Division of Solid and Hazardous Waste at 801-538-6170. Most of these documents are available on the Division's web page at www.hazardouswaste.utah.gov. Guidance documents can be found at the solid waste section portion of the web page.

When the application is determined to be complete, the original complete application and one copy of the complete application are required along with an electronic copy.

Part II **Application Checklist**

***I.* Facility General Information**	
Description of Item	Location In Document
***Ia.* General Information For - All Facilities**	
Completed Part I General information	Appendix G
General description of the facility (R315-310-3(1)(b))	Page 1
Legal description of property (R315-310-3(1)(c))	Page 2
Proof of ownership, lease agreement, or other mechanism (R315-310-3(1)(c))	Appendix F
A demonstration that the landfill is not a commercial facility	Page 2
Waste type and anticipated daily volume (R315-310-3(1)(d))	Page 2
Intended schedule of construction (R315-302-2(2)(a))	Page 2
***Ib.* General Information - New Or Laterally Expanding Class III Landfills**	
Documentation that the facility has meet the historical survey requirement of R315-302-1(2)(f) (R315-305-4(1)(b) or R315-305-4(2)(a)(iv))	Page 1
Name and address of all property owners within 1000 feet of the facility boundary (R315-310-3(2)(i))	Page 1
Documentation that a notice of intent to apply for a permit has been sent to all property owners listed above (R315-310-3(2)(ii))	Page 1
Name of the local government with jurisdiction over the facility site (R315-310-3(2)(iii))	Page 1

Utah Class III Landfill Permit Application Checklist

I. Facility General Information	
Description of Item	Location In Document
Ic. Location Standards - New Class IIIa Landfills (R315-304-4(1))	
Geology	NA
Geologic maps showing significant geologic features, faults, and unstable areas	NA
Maps showing site soils	NA
Surface water	NA
Magnitude of 24 hour 25 year and 100 year storm events	NA
Average annual rainfall	NA
Maximum elevation of flood waters proximate to the facility	NA
Maximum elevation of flood water from 100 year flood for waters proximate to the facility	NA
Wetlands	NA
Ground water	NA
Historic Preservation Survey	NA
Id. Additional Location Standards - New Class IIIa Landfills Not On Waste Generation Site	
Land use compatibility (R315-304-4(1)(a))	NA
Maps showing the existing land use, topography, residences, parks, monuments, recreation areas or wilderness areas within 1000 feet of the site boundary	NA
Certifications that no ecologically or scientifically significant areas or endangered species are present in site area	NA
List of airports within five miles of facility and distance to each	NA
Ie. Location Standards - New Class IIIb Landfills	
Floodplains as specified in R315-302-1(2)(c)(ii) (R315-304-4(2)(a)(i))	Page 1
Wetlands as specified in R35-302-1(2)(d) (R315-304-4(2)(a)(ii))	Page 1
The landfill is located so that the lowest level of waste is at least ten feet above the historical high level of ground water (R315-304-4(2)(a)(iii))	Page 1
Historical Preservation Survey (R315-304-4(2)(a)(iv))	Page 1
If. Plan of Operations - All Class III Landfills (R315-310-3(1)(e) and R315-302-2(2))	
Description of on-site waste handling procedures and an example of the form that will be used to record the weights or volumes of waste received (R315-302-2(2)(b) And R315-310-3(1)(f))	Page 2
Schedule for conducting inspections and monitoring, and examples of the forms that will be used to record the results of the inspections and monitoring (R315-302-2(2)(c), R315-302-2(5)(a), and R315-310-3(1)(g))	Page 3 Appendix D

I. **Facility General Information**	
Description of Item	Location In Document
Contingency plans in the event of a fire or explosion (R315-302-2(2)(d))	Page 3
Plan to control fugitive dust generated from roads, construction, general operations, and covering the waste (R315-302-2(2)(g))	Page 3
Plan for letter control and collection (R315-302-2(2)(h))	Page 3 & 9
Procedures for excluding the receipt of prohibited hazardous or PCB containing wastes (R315-302-2(2)(j))	Page 4
Procedures for controlling disease vectors (R315-302-2(2)(k))	Page 4
A plan for alternative waste handling (R315-302-2(2)(l))	Page 4
A general training and safety plan for site operations (R315-302-2(2)(o))	Appendix E
Any recycling programs planned at the facility (R315-303-4(6))	
Any other site specific information pertaining to the plan of operation required by the Executive Secretary (R315-302-2(2)(p))	
Ig. Ground Water Monitoring - Class IIIa landfills	
Ground Water Monitoring Plan (R315-304-5(4)(a)	NA
***II* Facility Technical Information**	
IIa. Maps - All Class III Landfills	
Topographic map drawn to the required scale with contours showing the boundaries of the landfill unit, ground water monitoring well locations, gas monitoring points, and the borrow and fill areas (R315-310-4(2)(a)(i))	Appendix A
Most recent U.S. Geological Survey topographic map, 7-1/2 minute series, showing the waste facility boundary; the property boundary; surface drainage channels; any existing utilities and structures within one-fourth mile of the site; and the direction of the prevailing winds (R315-310-4(2)(a)(ii))	Appendix A
IIb. Geohydrological Assessment - Class IIIa Landfills (R315-310-4(2)(b))	
Local and regional geology and hydrology including faults, unstable slopes and subsidence areas on site (R315-310-4(2)(b)(i))	NA
Evaluation of bedrock and soil types and properties including permeability rates (R315-310-4(2)(b)(ii))	NA
Depth to ground water (R315-310-4(2)(b)(iii))	NA
Quantity, location, and construction of any private or public wells on-site or within 2,000 feet of the facility boundary (R315-310-4(2)(b)(v))	NA
Tabulation of all water rights for ground water and surface water on-site and within 2,000 feet of the facility boundary (R315-310-4(2)(b)(vi))	NA

I. **Facility General Information**	
Description of Item	Location In Document
Identification and description of all surface waters on-site and within one mile of the facility boundary (R315-310-4(2)(b)(vii))	NA
For an existing facility, identification of impacts upon the ground water and surface water from leachate discharges (R315-310-4(2)(b)(viii))	NA
Calculation of site water balance (R315-310-4(2)(b)(ix))	NA
IIc. Engineering Report - Plans, Specifications, And Calculations - All Class III Landfills	
Unit design to include cover design; fill methods; and elevation of final cover including plans and drawings signed and sealed by a professional engineer registered in the State of Utah, when required (R315-310-3(1)(b))	Page 4
Design and location of run-on and run-off control systems (R315-310-5(2)(b))	Page 5
IId. Engineering Report - Plans, Specifications, And Calculations - Class IIIa Landfills	
Engineering reports required to meet the location standards of R315-304-4 including documentation of any demonstration or exemption made for any location standard (R315-310-4(2)(c)(i))	NA
Anticipated facility life and the basis for calculating the facility's life (R315-310-4(2)(c)(ii))	NA
Equipment requirements and availability (R315-310-4(2)(c)(iii))	NA
Identification of borrow sources for daily and final cover and for soil liners (R315-310-4(2)(c)(iv))	NA
Run-off treatment and disposal and documentation to show that any treatment system is being or has been reviewed by the Division of Water Quality (R315-310-4(2)(c)(v) and R315-310-3(1)(i))	NA
IIe. Closure Requirements - All Class III Landfills	
Closure plan (R315-310-3(1)(h))	Page 6
Closure schedule (R315-310-4(2)(d)(i))	Page 12 & 13
Design of final cover (R315-310-4(2)(c)(iii))	Page 4 & 5
Capacity of site in volume and tonnage (R315-310-4(2)(d)(ii))	Page 12
Final inspection by regulatory agencies (R315-310-4(2)(d)(iii))	Page 12
IIf. Post-Closure Care Requirements - All Class III Landfills	
Post-closure care plan (R315-310-3(1)(h))	Page 13
Changes to record of title, land use, and zoning restrictions (R315-310-4(2)(e)(ii))	
Maintenance activities to maintain cover and run-on/run-off control systems (R315-310-4(2)(e)(iii))	Page 13

I. **Facility General Information**	
Description of Item	Location In Document
List the name, address, and telephone number of the person or office to contact about the facility during the post-closure care period (R315-310-4(2)(e)(vi))	Page 11
IIg. Financial Assurance Requirements - All Class III Landfills	
Identification of closure costs including cost calculations (R315-310-4(2)(d)(iv))	Page 5,17 & App F
Identification of post-closure care costs including cost calculations (R315-310-4(2)(e)(iv))	Page 5,17 & App F
Identification of the financial assurance mechanism that meets the requirements of Rule R315-309 and the date that the mechanism will become effective (R315-309-1(1) and R315-310-3(1)(j))	Page 5,17 & App F

N:\ALL\SWS-Form\Permit Application forms\2007_Class_III application_and_checklist.doc